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BIBLIOGRAPHY

OBZOR POL'SKOY TEKNICHESKOY LITERATURY. POLISH TECHNICAL ABSTRACTS, 1959, NO. 1(33). Abstracts 5744-5888. 1959, 1v.
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Polish Technical Abstracts contain, in English and Russian, bibliographical descriptions of contributions selected from articles which have appeared in technical periodicals, as well as from books, pamphlets and other publications appearing in Poland. Photocopies and microfilms of documents included in the publication are provided on request.

TRANSLATIONS SERVICE ACCESSIONS. 1 Oct 59 [51]p. TG 230-T176.
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Library of Congress, Washington, D. C.
EAST EUROPEAN ACCESSIONS INDEX. Dec 59, 275p.
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Designed to serve the English-speaking user, this index lists post World War II publications received by the Library of Congress and over 100 major American research libraries from Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland, Rumania, and Yugoslavia in all fields of knowledge. Arrangement in the first part is by country and within each country by 17 subject classes. In addition to the entry in the original language, a translation of the title or a descriptive annotation in English is given for each monograph and periodical, with the tables of contents translated into English for selected periodicals. The second part, comprising approximately two-thirds of the Index, consists of a subject index to all articles appearing in periodicals for which the tables of contents are translated and to all monographs listed.

AGRICULTURE

GIDROTEKHNIKA I MELIORATSIYA (USSR) 1959, (Hydraulic Engineering and Soil Improvement). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 8, p. 3-64, PB 141 092T-16
No. 9, p. 3-64, PB 141 092T-17
No. 10, p. 3-64, PB 141 092T-18

Consists of abstracts in English.

SEVEN-YEAR PLAN FOR THE DEVELOPMENT OF THE NATIONAL ECONOMY OF THE USSR AND SCIENCE. 10 Nov 59, 6p. JPRS: L-1048-N.
Order from OTS $0.50 59-13998

Trans. of Nauchnyye Doklady Vysshey Shkoly. Biologicheskiye Nauki (USSR) 1959, no. 1, p. 7-10.

In this discussion of the contributions to be made to the progress of the Soviet Union by the biological scientists, reference is made to problems of soil chemistry, pest control, irrigation, forestry, and fish culture.

Animal Husbandry

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 15 (Soviet Abstracts. Biology). 20 Nov 59, 72p. JPRS: 2022-N.
Order from OTS $1.00 60-11070

Contents:
Section Q. Farm Animals: Abstracts 69210-69449.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1959, NO. 2 (Soviet Abstracts. Biology). 16 Nov 59, 35p. JPRS: 2013-N.
Order from OTS $1.00 60-11038

Contents:
Section R. Diseases of Farm Animals. Abstracts 7417-7492.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Bajez, Edgar.
EXPERIMENTAL FATTENING AND STERILIZATION OF SWINE WITH HIGH DOSES OF ESTROGENS, tr. by P. M. M. 23 July 56, 4p.
Order from SLA mi$1.80, ph$1.80 59-20969

Trans. of Wien[er] Tierärztl[iche] Monatschr[ift] (Austria) 1953, v. 40 [no. 4] p. 226-229.

Sedlnitsky, M.
THE INFLUENCE OF AGENT (VITAMIN) T ON FEED UTILIZATION AND GROWTH OF CHICKS. [1959] [4]p. [1 fig. 2 tables and bibliography omitted].
Order from SLA mi$1.80, ph$1.80 59-20968

Trans. of Wien[er] Tierärztl[iche] Monatsschr[ift] (Austria) 1950, v. 37 [no. 9] p. 644-[649].

Plant Cultivation

Gericke, S.
FLUORINE AND PHOSPHORIC ACID, tr. by G. G. S. 16 May 51, 3p.
Order from SLA mi$1.80, ph$1.80 59-20765

Partial trans. (summary, p. 158) of Z[eitschrift für] Pflanzenernahrung, Dungung, Bodenkunde (West Germany) 1949, v. 46, p. 152-169.

Metlitskiy, L. V. and Tsekhomskaya, V. M.
BIOCHEMICAL NATURE OF PHYSIOLOGICAL DISEASES OF APPLES (Biokhimicheskaya Priroda Fiziologicheskikh Zabolevaniy Yablok). Oct 59 [9]p. 12 refs. RTS no. 1220.
Order from LC or SLA mi$1.80, ph$1.80 59-22167

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 122, no. 5, p. 863-866.

ASTRONOMY

*ASTRONOMICHESKIY ZHURNAL (USSR) 1959, (Astronomical Journal). [1959]
Order from OTS $0.70, $4.00/year
Foreign $0.95, $5.50/year

No. 2, p. 201-384, PB 141 028T-8
No. 3, p. 385-560, PB 141 028T-7

Consists of abstracts in English.

BEHAVIORAL SCIENCES

Psychology

Lorenz, Konrad.
INBORN INSTINCTUAL HUMAN BEHAVIOR PATTERNS (Über Angeborene Instinktformeln Beim Menschen) tr. by H. M. Warfield. 12 May 59, 37p. 22 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-16299

Trans. of Deutsche Med[izinische] Wochenschr[ift] (West Germany) 1953 [v. 79] no. 45, p. 1566-1569 and no. 46, p. 1600-1604.

Simon, Frederic.
HUMAN RELATIONS AND PSYCHOMETRICS (Relations Humaines et Psychotechnique). [1959] [18]p. 23 refs.
Order from SLA mi$2.40, ph$3.30 59-20868

Trans. of Centre d'Études et Recherches Psychotechniques. Bulletin (France) 1954, v. 3, no. 2, p. 2-9.

This paper appears to be an introduction to a series of articles on the role of the industrial psychologist in France. The observation is made that methods of group dynamics lend themselves to an understanding of the conflicts of daily professional life. The industrial psychologist must refrain from taking sides in the clash of economic ideologies and confine himself to an examination of motives in a changing society.

BIOLOGICAL SCIENCES

Anatomy and Physiology

PROBLEMS OF HEMATOLOGY AND BLOOD TRANSFUSION, 1958, VOL. 3, NO. 6, P. 349-418. May 59, 1v.
Order from PP $20.00/year

Trans. of Problemy Gematologii i Perelivaniya Krovi (USSR) 1958, v. 3, no. 6, p. 3-57.

Atzler, E.
PHYSIOLOGICAL ASPECTS OF INDUSTRIAL FATIGUE. 10p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10197

Trans. of Gewerbefleiss (Germany) [1929] v. 108, no. 2/3, p. 35-42.

Bosse, J.
IS IT POSSIBLE TO COUNTERACT PREMATURE AGING SUCCESSFULLY? 17 Feb 58, 10p. 16 refs.
Order from SLA mi$1.80, ph$1.80 59-20998

Trans. of unidentified mono. 10 Jan 58, not published.

"Regenerases" (active substances obtained from embryonic and young animal cells) were used in treatment of about 500 patients suffering from various disorders attributable to senescence. The action seems to be specific for the organ and occurs usually within 4 weeks. No anaphylactic reactions were observed.

Lambercier, Marc.
RESEARCH IN PERCEPTUAL DEVELOPMENT. VII. CONFIGURATION IN DEPTH IN THE CONSTANCY OF SIZES (Recherches sur le Developement des Perceptions. VII. La Configuration en Profondeur dans la Constance des Grandeurs) tr. by H. Warfield.
23 July 59, 12p.
Order from LC or SLA mi$2.40, ph$3.30 59-18484

Trans. of Archives de Psychologie (Switzerland) 1946, v. 31, p. 300-306.

Libretti, A. and Martini, L.
RELATION BETWEEN ANTERIOR AND POSTERIOR HYPOPHYSIS, II. [1959] 4p. 7 refs.
Order from SLA mi$1.80, ph$1.80 60-10491

Trans. of Arch[ives] Intern[ationales de] Pharmacodynamie [et de Therapie] (Belgium) 1953, v. 93 [no. 2] p. 163-166.

Piaget, Jean, Lambercier, Marc and Iturbide, Renée.
THE PROBLEM OF VISUAL COMPARISON IN DEPTH (CONSTANCY OF SIZE) AND THE SYSTEMATIC ERROR OF THE REFERENCE OBJECT (Le Probleme de la Comparaison en Profondeur (Constance de la Grandeur) et l'Erreur Systématique de Létalon), tr. by H. M. Warfield. 23 July 59, 18p.
Order from LC or SLA mi$2.40, ph$3.30 59-18482

Trans. of Archives de Psychologie (Switzerland) 1943, v. 29, p. 267-276.

Piaget, Jean and Lambercier, Marc.
VISUAL COMPARISON OF HEIGHTS AT VARYING DISTANCES IN THE FRONTO-PARALLEL PLANE (II) (La Comparaison Visuelle des Hauteurs a Distances Variables Dans le Plan Fronto-Parallèle) tr. by H. Warfield. 23 July 59, 9p. (2 graphs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18485

Trans. of Archives de Psychologie (Switzerland) 1958, v. 29, p. 188-193.

Shepelin, O. P.
THE EFFECT OF IMPULSE NOISE ON WORKMEN IN INDUSTRY. 6 Nov 59, 12p. 20 refs. JPRS: L-1041-N.
Order from OTS $0.50 59-13980

Trans. of Gigiyena i Sanitariya (USSR) 1959 [v. 24] no. 8, p. 26-32.

Biochemistry

Barrenscheen, H. K. and Filz, Wilhelm.
STUDIES ON COENZYME ACTIVITY. II. CHEMISTRY OF ADENOSINETRIPHOSPHORIC ACID, tr. by P. M. M. 28 June 51, 3p.
Order from SLA mi$1.80, ph$1.80 60-10470

Partial trans. (p. 282-285) of Biochem[ische] Z[eitschrift] (Germany) 1932, v. 250, p. 281-304.

Braunshteyn, A. Ye.
CERTAIN FEATURES OF THE CHEMICAL INTEGRATION OF THE PROCESSES OF NITROGEN METABOLISM. 19 Oct 59, 31p. 116 refs. JPRS: L-1020-N.
Order from OTS $1.00 59-13952

Trans. of mono. Nekotoryye Cherty Khimicheskoy Integratsii Protesessov Azotistogo Obmena, Moscow, 1958, p. 1-28.

To the number of biocatalytic systems which possess particularly diverse functions in the cellular metabolism belong: polyphosphates of adenosine, dicarbonic keto- and amino- acids, codehydrases, co-enzyme A, pyridoxal-phosphate, and some others. In a living cell the effective concentrations of specifically reacting components of such systems are continuously subjected to reversibly changes as a result of which the velocities of multinomial enzymatic processes are changing fast, and their directions are switched. These changes are caused, to a great extent, by the action of a small number of general kinetic mechanisms. To the latter belong mutual transformations, or shifting of carrier-molecules; mutual interference between various cycles of reactions in which common to them, intermediary products or biocatalysts participate; competition for active enzymic centers between various amino acids or other metabolites, which act in relation to one another as natural antimetabolites, etc. The majority of bonds and interactions between the metabolic cycles which are reviewed here and are based on the author's investigations and on literature data, basically represent the manifestations of the above mentioned and analogous simple

chemical mechanisms. These phenomena are used as examples to show that the conception of chemical integration on the molecular level is justified as an approach to the interpretation of many important facets of the coordination of metabolic processes.

Dingemanse, Elisabeth.
DIALYZABILITY AND ADSORBABILITY OF INSULIN. II. ADSORPTION OF INSULIN ON KAOLIN, tr. by P. M. M. 19 Jan 50, 5p.
Order from SLA mi$1.80, ph$1.80 60-10457

Partial trans. (p. 417-421) of Biochem[ische] Z[eitschrift] (Germany) 1925 v. 163, p. 412-421.

Insulin does not diffuse through a collodion membrane either by dialysis or by electrodialysis. Insulin in an acid solution diffuses to a slight extent only through parchment. In electrodialysis the insulin dissolved in HCl solution and the protein pass from the anode to the cathode. Here the insulin and protein flocculate slightly. However, with (more or less) unpurified preparations, insulin flocculates more than protein. If the insulin preparation has attained a certain degree of purity (0.05 mg per unit), no further separation of the protein occurs with the aid of electrodialysis. Insulin solutions with about 0.06 mg dry substance per unit are not adsorbed on kaolin in acid solution. Insulin preparations of greater impurity, with 0.4 to 0.5 mg dry substance per unit, are only partly adsorbed on kaolin. On shaking insulin in a sodium carbonate solution with kaolin, the greater part (about 80 percent) of insulin is recovered in the filtrate. Insulin in more or less purified pancreas extracts is adsorbed on charcoal in an acid as well as in a neutral solution. Only very slight amounts of insulin may be separated from charcoal by 80% alcohol or solutions buffered at pH= 8. Slightly more, but still very little insulin, may be removed by glacial acetic acid. (Author's summary)

Favarger, P. and Gerlach, Juliette.
VARIATIONS IN THE MODE OF RESORPTION OF DIFFERENT FATS AND FATTY ACIDS IN THE RAT (Variations dans le Mode de Résorption des Différentes Graisses et Acides Gras chez le Rat) tr. by D. L. Tuffanelli. Nov 59 [6]p. 16 refs.
Order from SLA mi$1.80, ph$1.80 60-10658

Partial trans. (p. 247-249) of Helvetica Physiologica et Pharmacologica Acta (Switzerland) 1953, v. 11 [no. 3] p. 239-250.

Friedheim, Ernst A. H.
THE OXIDATION REDUCTION POTENTIAL OF MAMMALIAN TISSUES, tr. by P. M. M. 10 June 54, 2p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10375

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1929, v. 189, p. 266-268.

Goleyshovski, Vaclay and Shorm, Frantitek.
AMINO-ACIDS AND PEPTIDES. XV. PREPARATIVE ISOLATION OF SOME AMINO ACIDS FROM GELATIN HYDROLYSATES, tr. by Carl Demrick. 1949, 11p. (4 figs omitted) 39 refs.
Order from SLA mi$2.40, ph$3.30 60-10372

Trans. of Sbornik Chekhosl[ovatskykh] Khim[icheskykh] Rabot, 1955, v. 20 [no. 20] p. 586-592.

By modifying the Fischer distillation method and by combining it with partition chromatography in cellulose columns, L-proline, DL-oxyproline, L-valine and a mixture of leucine and iso-leucine were obtained with good yields from gelatin hydrolysates in a pure state.

Grau, R., Hamm, R., and Baumann, A.
THE WATER-BINDING CAPACITY OF DEAD MAMMALIAN MUSCLE. I. THE EFFECT OF pH-VALUE ON THE WATER-BINDING OF GROUND BEEF MUSCLE, tr. by P. M. M. 15 May 57, 15p. 22 refs.
Order from SLA mi$2.40, ph$3.30 60-10485

Trans. of Biochem[ische] Z[eit]schr[ift] (West Germany) 1953, v. 325 [no. 1] p. 1-11.

The water-binding power of muscle, i.e., its capacity for retaining water under specified conditions, has the same dependence on the pH-value as the swelling capacity. The pH-value of the minimal water-binding and swelling capacity is about 5, that is, in the range of the isoelectric point of actomyosin. The minimal water binding capacity of minced muscle occurs at higher pH-values as the addition of "foreign water" is increased. On the acid side of the isoelectric point, the water-binding capacity of muscle increases with increased addition of "foreign water", on the alkaline side of the isoelectric point it decreases. These findings are interpreted and lead to the conclusion that acid and alkali change the micellar structure of muscle proteins in different ways. (Author)

Hahn, L.
THE MUCOLYTIC ENZYME OF MAMMAL TESTICLES. [1959] 15p. 19 refs.
Order from SLA mi$2.40, ph$3.30 60-10477

Trans. of Biochemische Zeitschrift (Germany) 1943, v. 315 [no. 1/2] p. 83-96.

The enzyme in question is hyaluronidase.

Hofer, E.
THE BEHAVIOR OF AMINO ACIDS OR PEPTIDES WITH HIGHER FATTY ACIDS, II. [1959] 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10482

Trans. of Biochem[ische] Z[eitschrift] (Germany) 1936, v. 288 [no. 1/2] p. 39-40.

Holts, Peter, Credner, Karl, and Strübing, Christel.
PRESENCE OF DEHYDROXYPHENYLALANINE DECARBOXYLASE IN PANCREAS. [1959] 7p. (6 figs. omitted) 13 refs.
Order from SLA mi$1.80, ph$1.80 60-10496

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Pathol[ogie und] Pharmakol[ogie] (Germany) 1942, v. 199, p. 145-152.

Manometric and blood-pressure experiments demonstrated that pancreas of guinea pigs, cats, dogs, cattle and pigs contain the enzyme dopadecarboxylase. Histidine decarboxylase was also found in the guinea pig. Tyresine decarboxylase was not detected under the same experimental conditions, in which detection in kidney and liver had been successful, and under which dopa- and histidine-decarboxylase was successfully identified in pancreas. By using a somewhat changed method of experimental manipulations in comparison with methods of earlier experiments it was possible to determine dopadecarboxylase in kidney and liver of even animal species, in which it had not been possible before. The human kidney contains the enzyme also; the cortex of the kidney is richer in enzymes than the kidney modulla. The earlier theory, that the dopadecarboxylase was acting as auxiliary enzyme in the biological adrenaline formation was confirmed by the results of the foregoing work.

Liebecq, Claude.
PSEUDOHEMOGLOBIN AND THE CATABOLISM OF HEMIN DERIVATIVES. [1959] 7p. 45 refs.
Order from SLA mi$1.80, ph$1.80 60-10382

Trans. of Experientia (Switzerland) 1948, v. 4 [no. 2] p. 56-59.

Kuhn, Richard and Leppelmann, Hermann Josef.
THE HEXOSAMINE CONTENT OF CARTILAGE IN DEPENDENCE ON AGE (Der Hexosamingehalt der Knorpels in Abhängigkeit vom Lebensalter) tr. by W. H. Everhardy. 27 May 59, 9p. (1 graph omitted) 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-16556

Trans. of [Justus] Liebigs Ann[alen der] Chem[ie] (West Germany) 1957, v. 607, p. 202-206.

Lohmann, K. and Schuster, Ph.
OCCURRENCE OF ADENIN-NUCLEOTIDES IN THE TISSUES. II. HEART MUSCLE, tr. by G. S. 17 July 51, 2p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10479

Partial trans. (p. 106-108) of Biochem[ische] Z[eitschrift] (Germany) 1935, v. 282 [no. 1/2] p. 104-108.

Lohmann, K.
PREPARATION OF ADENYLPYROPHOSPHORIC ACID FROM MUSCLE. THE PRINCIPLE OF ISOLATION FROM MUSCLE, tr. by P. M. M. 15 Oct 51, 4p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10469

Partial trans. (p. 463-467) of Biochem[ische] Z[eitschrift] (Germany) 1931, v. 233, p. 460-469.

Lohmann, K.
SPLITTING OF ADENYLPHOSPHORIC ACID AND ARGININPHOSPHORIC ACID IN CRAYFISH MUSCLE. [1959] 1p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10478

Partial trans. (p. 115) of Biochemische Zeitschrift (Germany) 1935, v. 282 [no. 1/2] p. 109-119.

Lussier, J. P.
INCORPORATION OF RADIOACTIVE CITRIC ACID IN THE BONES OF ALBINO RATS (Incorporation de l'Acide Citrique Radioactif dans le Squelette du Rat Blanc) tr. by P. Hajdu. 18 Aug 59, 16p. (2 figs. omitted) 19 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18958

Trans. of Revue Canadienne de Biologie, 1957, v. 16, no. 4, p. 434-444.

Maurer, Kurt and Schiedt, Bruno.
THE BEHAVIOR OF d-ARABOASCORBIC ACID AND VITAMIN C TOWARDS FERROUS SALTS. [1959] 5p. 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10480

Trans. of Biochem[ische] Z[eitschrift] (Germany) 1936, v. 285 [no. 1/2] p. 67-71.

Ozaki, Junichi.
THE NUTRITIVE VALUE OF FATS, III. [1959] 3p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10466

Trans. of Bioch[emische] Z[eitschrift] (Germany) 1928, v. 192, p. 428-430.

See also 60-10459

Prelog, V. and Meister, P.
ORGAN EXTRACTS. XVII. ISOLATION OF PROGESTERONE FROM THE CORPEUS LUTEUM OF WHALE, tr. by P. M. M. 11 June 52, 9p. [1 table omitted] 18 refs.
Order from SLA mi$1.80, ph$1.80 60-10397

Trans. in manuscript of Helv[etica] Chim[ica] Acta (Switzerland) 1949, v. 32 [no. 7] p. 2435-2439.

According to a method by means of which it is possible to obtain a good yield of progesterone from corpeus luteum in a simple way, 33 mg of progesterone per kg of gland was isolated from the corpeus luteum of the whale, a quantity which is approximately the quantity anticipated according to the biological activity. (Author)

Realdon, A. M.
ENZYMATIC DETERMINATION OF GLUCOSE IN BLOOD AND IN URINE. [1959] 12p. (refs. omitted).
Order from SLA mi$2.40, ph$3.30 60-10001

Trans. of Bollettino Chimico-Farmaceutico (Italy) 1958, v. 97, p. 560-566.

Reichstein, T.
CONSTITUENTS OF THE ADRENAL CORTEX. II. ADRENOSTERONE. [1959] 4p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10407

Partial trans. (p. 223-225) of Helv[etica] Chim[ica] Acta (Switzerland) 1936, v. 19 [p. 223-234].

See also 60-10404, 60-10406

Ssadikow, W. S.
HYDROLYSIS OF PROTEINS BY AMMONIA UNDER PRESSURE. PREPARATION OF PEPTONE, tr. by P. M. M. 28 Apr 54, 8p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10467

Trans. of Biochem[ische] Z[eitschrift] (Germany) 1929, v. 205, p. 360-368.

Stoll, Arthur.
INTRODUCTION TO THE CHEMISTRY OF THE HEMINS, tr. by G. G. S. [1959] 27p. 286 refs.
Order from SLA mi$2.70, ph$4.80 60-10383

Trans. of Experientia (Switzerland) 1948, v. 4, no. 1, p. 6-22.

Warburg, Otto and Christian, Walter.
PYRIDINE, THE HYDROGEN-TRANSFERRING COMPONENT OF THE FERMENTATION ENZYMES. (PYRIDINE-NUCLEOTIDE). [1959] [6]p. 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10481

Partial trans. (p. 302-[307]) of Biochem[ische] Z[eitschrift] (Germany) 1936, v. 287 [no. 5/6] p. 291-328.

A method is described by which the adenine nucleotide and the two pyridine nucleotides may be isolated from red horse blood cells in one operation. The method does not depend on chance for the isolation of the three nucleotides.

Zelinsky, N. and Ssadikow, W.
HYDROLYSIS OF PROTEINS BY MEANS OF DILUTE ACIDS, tr. by P. M. M. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10456

Trans. of Biochem[ische] Z[eitschrift] (Germany) 1923, v. 138, p. 156-160.

Microbiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 22 (Soviet Abstracts. Biology). 13 Nov 59, 21p. JPRS: 2010-N.
Order from OTS $1.00 60-11032

Contents:
Section E. Virology: Abstracts 99070-99192.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Blokhov, V. P., Markelov, I. M., and Mukhin, V. F.
ACCELERATED DETECTION OF THE PATHOGENS OF CERTAIN DISEASES BY THE FLUORESCENT ANTIBODY METHOD. 28 Oct 59, 2p. JPRS: L-1029-N.
Order from OTS $0.50 59-13967

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 6, p. 71-75.

Gal'per, G. S. and Zolochevskiy, M. A.
THE USE OF AUTOMOBILE AIR BRAKES FOR ASPIRATING AIR THROUGH BACTERIAL SAMPLERS. 28 Oct 59, 8p. (1 fig. omitted) 1 ref. JPRS: L-1030-N.
Order from OTS $0.50 59-13968

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 6, p. 91.

Lastkov, O. A.
AN EXPERIMENTAL STUDY OF THE BACTERIAL CONTAMINATION OF THE AIR IN CLOSED-TYPE LIVING QUARTERS. 2 Nov 59, 4p. JPRS: L-1039-N.
Order from OTS $0.50 59-13987

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 5, p. 75-77.

Neipp, L., Kunz, W., and Meier, R.
RELATIONS BETWEEN THE "RESPIRATORY METABOLISM" OF BACTERIA AND THE BACTERIOPHAGE TYPE AND THE ACTIVITY OF ANTIPHAGE SUBSTANCES (Relations du "Metabolisme Respiratoire" des Bacteries et du Type de Bacteriophage avec l'Activite de Substances Antiphages). [1959] 6p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10710

Trans. of Experientia (Switzerland) 1959, v. 15, no. 7, p. 258-260.

Neurology and Psychiatry

Mayorov, V. N.
NEW DATA ON THE STRUCTURE OF LIVING AND SURVIVED NEURONS AND INTERNEURONAL CONNECTIONS. 27 Oct 59, 15p. 23 refs. JPRS: L-1031-N.
Order from OTS $0.50 59-13969

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1959, v. 36, no. 6, p. 3-10.

Remond, Antoine.
RECENT DATA OF ELECTRO-ENCEPHALOGRAPHY IN CLINICAL NEUROPHYSIOLOGY; UNDERSTANDING OF THE NERVOUS SYSTEM AND TREATMENT OF ITS DISEASES (Des Acquisitions Recentes de l'Electro-Encephalographie aux Perspectives de la Neurophysiologie Clinque dans la Comprehension du Systeme Nerveux et le Traitement de ses Maladies) tr. by W. Grosjean. 20 Mar 59, 25p. (8 figs. omitted) 3 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-14550

Trans. of Concours Médical (France) 1958 [v. 80] no. 1, p. 19-32.

Ugolev, A. M. and Chernigovskiy, V. N.
ON THE ROLE OF INTEROCEPTORS IN THE FORMATION OF BEHAVIOR IN HIGHER ANIMALS. 29 Oct 59, 7p. 15 refs. JPRS: L-1026-N.
Order from OTS $0.50 59-13970

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 126, no. 2, p. 450-453.

Pathology

STUDY PLANS OF INSTITUTES FOR THE ADVANCED TRAINING OF PHYSICIANS. 4 Nov 59, 149p. JPRS: L-1032-N.
Order from OTS $2.75 59-13971

Trans. of mono. Uchebnyye Plany Institutov Usovershenstvovaniya Vrachey, Moscow, 1958, p. 1-125.

This collection of study plans, to which the attention of teachers and students of the institutes for advanced training of physicians is called, contains study plans of cycles of specialization and advanced training of physicians which have been approved, in accordance with the directive of the Ministry of Health USSR, No 3, of 4 January 1957. In the new study plans are reflected the numerous wishes of the teachers and students of the institutes for advanced training of physicians to concentrate study hours, as much as possible, on the basic clinical discipline of the student; a more correct proportional correlation of lectures and practical work is given, and instruction on all cycles of the selected chapters on Marxism-Leninism, military training, and MS MPVO [Medical Service Local Anti-Aircraft Defense] has been unified.... Thus, this collection of study plans consists of basic study plans which are obligatory to all institutes for advanced training of physicians, and of short-term thematic plans approved for the Central Institute for the Advanced Training of Physicians and for the Leningrad Order of Lenin imeni S. M. Kirov Institute for Advanced Training of Physicians. (Extracted from the foreword)

Althoff, H. and Werner, H.
OCCURRENCE AND SIGNIFICANCE OF ERYTHROPOIETINS IN ERYTHROBLASTOSIS FOETALIS, tr. by P. M. M. 26 Nov 57, 9p. 23 refs.
Order from SLA mi$1.80, ph$1.80 60-10511

Trans. of Acta Haematologica (Switzerland) 1957, v. 18 [no. 2] p. 126-136.

It was found that erythropoetins exist in the blood of the umbilical cord in man, which provoke and maintain the physiological polycythemia of the newborn. Erythropoetins can appear in an increasing quantity in the newborn if marked blood destruction takes place as a result of incompatibility. The absence of these effective substances in the blood in such children in whom an exchange transfusion has been performed at a later stage, must be connected with damage of the producing organs. Marrow insufficiency can also be due to the deficiency of these stimulating substances. (Author)

Bätzner, W[ilhelm].
TRYPSIN THERAPY OF SURGICAL TUBERCULOSIS. [1959] 30p. (5 figs. 5 tables omitted).
Order from SLA mi$2.70, ph$4.80 60-10489

Trans. in manuscript of Arch[iv] f[ür] Klin[ische] Chir[urgie] (Germany) 1911, v. 95 [no. 1] p. 89-111.

Berner, A.
OSTEODYSTROPHIES OF RENAL ORIGIN (A STUDY OF THE SKELETAL STRUCTURE IN 138 CASES OF RENAL DISEASE) Les Osteodystrophies d'Origine rénale (Étude Systématique du Squelette dans 138 Cas de Maladies rénales), tr. by D. B. McGill. Aug 59 [10]p. (2 figs omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10666

Trans. of Helvetica Medica Acta (Switzerland) 1944, v. 11, pt. 1, p. 741-754; pt. 2. p. 961-1010.

De Gaetani, G. F.
PATHOGENESIS OF CANCER METASTASES, tr. by P. DePorte. 22 Oct 58, 9p.
Order from LC or SLA mi$1.80, ph$1.80 59-12134

Trans. of R[i]forma Medica (Italy) 1957, v. 71, p. 1421-1422.

Dick, W.
THE PROPHYLAXIS OF THROMBOSIS AND EMBOLISM (Die Prophylaxe der Thrombose und Embolie) tr. by William H. Everhardy. Rept. of the experience of the Tübingen Clinic. 9 Feb 59, 28p. (Bibliography omitted)
Order from LC or SLA mi$2.70, ph$4.80 59-12970

Trans. of Die Medizinische (West Germany) 1958, p. 543-549.

These observations on postoperative thrombosis and embolism are based on clinical experience with 4520 surgical and accident cases. The use of various anticoagulants is described. Early ambulation is considered to be of especial importance. The comment is made that treatment and prophylaxis as presently practiced evade the main issue, which is the unknown etiology of thrombosis.

Herrlich, A.
SMALLPOX: IMPRESSIONS ABOUT AN EPIDEMIC IN BOMBAY IN THE YEAR 1958 (Variola: Eindrücke von einer Epidemie in Bombay in Jahre 1958) tr. by Claudius F. Mayer. [1959] [8]p. (figs. and plates omitted) H 3361.
Order from LC or SLA mi$1.80, ph$1.80 59-16414

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1958, v. 83, no. 34, p. 1426-1428.

Kuznetsova, N. I. and Shurkovich, S. V.
ON BURN AUTO-ANTIBODIES. 29 Oct 59, 7p. 2 refs. JPRS: L-1027-N.
Order from OTS $0.50 59-13965

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1959, v. 3, no. 4, p. 57-60.

The sera of certain dogs subjected to thermal injury acquire the capacity to bind complement in the presence of antigen from burned skin of dogs. With the antigen from normal, unburned skin taken from the same dogs, these sera interact considerably less strongly or not at all. With the antigens from other organs of dogs, and also with the Wasserman antigen, the sera do not react at all. On the basis of these results, it is possible to conclude that, in the tissues of organisms subjected to burn, toxic substances are formed principally at the site of the burn; these are auto-antigens, to which the organism responds by means of the elaboration of specific anti-burn antibodies. (Extracted from the report)

Margolis, D. A.
FOR THE FULFILLMENT OF THE SEVEN-YEAR PLAN AHEAD OF TIME. 3 Nov 59, 3p. JPRS: L-1046-N.
Order from OTS $0.50 59-13996

Trans. of Meditsinskaya Promyshlennost' SSSR, 1959 [v. 13] no. 7, p. 6-8.

The exploits of individual technicians employed in the Krasnogvardeyets medical instrument plant (Leningrad?) are reported. Apparatus produced by this plant includes a device for suturing the gastric stump, a new new EKG model, a cuvette oxymeter, phonocardiographic apparatus and an operating microscope.

Medvedev, N. N.
FIFTEEN YEARS OF EXPERIENCES IN WORK WITH LINEAR MICE IN EXPERIMENTAL ONCOLOGY. 29 Oct 59, 16p. 31 refs. JPRS: L-1028-N.
Order from OTS $0.50 59-13966

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1959, v. 3, no. 4, p. 76-82.

de Moragas, Jeronimo.
TREATMENT OF MONGOLOIDISM WITH DEHYDRO-EPI-ANDROSTERONE (Tratamiento del Mongoloidismo por la Dehidro-epi-androsterona) tr. by P. DePorte. 18 Mar 59, 9p. (4 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-14521

Trans. of Revista Espanola de Pediatria (Spain) 1958, v. 14 [no. 82] p. 545-552.

Clinical experience in the use of dehydro-epi-androsterone is reported. This drug is judged to be the most effective currently in use. The earlier it is used, the more manifest are its effect, which include improved somatic development and an improved response to stimuli.

Ricci, G.
BULBAR POLIOMYELITIS DUE TO TYPE-III POLIO VIRUS (Poliomielite Bulbare da Virus Polio Tipo III) tr. by W. H. Everhardy. 17 Feb 59, 8p. (8 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-14056

Trans. of Giorn[ale di] Mal[attie] Infett[ive] e Parassit[arie] (Italy) 1958, v. 10, p. 359-361.

Satoh, Hiroshi and Tamano, Tazuko.
ORAL ADMINISTRATION OF NITROMIN TO THE ANIMALS BEARING YOSHIDA SARCOMA AND ASCITES HEPATOMA (II) tr. by William Himel. 5 Nov 58, 5p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-12102

Trans. of Gann (Japan) 1957, v. 48, no. 4, p. 465-466.

Stramignoni, A. and Genesi, M.
PATHOLOGICAL ANATOMY OF PULMONARY COMPLICATIONS IN THE LEUKEMIC INDIVIDUALS (Anatomia Patologica delle Complicazioni Polmonari in Soggetti Leucemici) 8 Mar 59 [45]p. (19 figs. omitted).
Order from LC or SLA mi$3.30, ph$7.80 59-18964

Trans. of Archivio per le Scienze Mediche (Italy) 1957, v. 105, no. 4, p. 361-392.

Studenikin, M. Ya.
THE JOINT PLENUM OF PEDIATRICIANS, OBSTETRICIANS AND GYNECOLOGISTS. 27 Oct 59, 6p.
JPRS: L-1025-N.
Order from OTS $0.50 59-13960

Trans. of Pediatriya (USSR) 1959, v. 37, no. 5, p. 93-95.

The major topics under discussion were intracranial trauma in the newborn, and staphylococcus infection.

Tokuoka, Junichi, Tokuyama, Hidetaro and others.
NITROMIN CONTENT IN THE CIRCULATING BLOOD AND THE URINE, tr. by William Himel. 4 Nov 58, 6p.
Order from LC or SLA mi$1.80, ph$1.80 59-12103

Trans. of Gann (Japan) 1957, v. 48 [no. 4] p. 425-427.

Vargha, Miklos.
MIGRAINE TREATMENT WITH CHEMAZULENES (Migränebehandlung mit Chamazulen), tr. by P. M. M. 29 Jan 51 [9]p. 21 refs. (foreign text of abstract included).
Order from SLA mi$1.80, ph$1.80 60-10006

Trans. of Psychiatrie, Neurol[ogie] und Med[izinische] P[sychologie] (East Germany) 1950, v. 2, p. 116-117 and Chem[isches] Z[entral]bl[att] (Germany) 1950-II, v. 121, p. 1843, abstract 4628.

Wissmann, R.
KERATITIS FILIFORMIS AS A LOCAL SYMPTOM OF DISTURBANCES OF INTERNAL SECRETION (Keratitis Filiformis, als Teilsymptom Innersekretorischer Störungen) tr. by Paul V. DePorte 24 Mar 59, 9p.
Order from LC or SLA mi$1.80, ph$1.80 59-14575

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1932, v. 58, no. 39, p. 1525-1527.

Pharmacology and Toxicology

Acher, Roger and Chauvet, Jacqueline.
THE STURCTURE OF OX VASOPRESSIN, tr. by P. M. M. 12 Jan 54, 3p. 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10500

Trans. of Biochim[ica] et Biophys[ica] Acta (Netherlands) 1953, v. 12 [no. 3] p. 487-488.

Bromig, Georg.
MECHANISM OF THE STIMULATING ACTION OF TRYPSIN ON THE INTESTINE, tr. by P. M. M. Doctoral thesis. 20 May 54, 18p. (13 figs. omitted) 32 refs.
Order from SLA mi$2.40, ph$3.30 59-20997

Trans. of unidentified German mono. Frankfurt a. M. 4 Dec 53.

Dietzel, R. and Schmidt, E.
THE SUBSTANCES CONTAINED IN ORTHOSIPHON STAMINEUS BENTH (Über die Inhaltsstoffe von Orthosiphon stamineus Benth) tr. by W. H. Everhardy. 3 Sep 59, 11p. (2 figs. omitted) 17 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-19209

Trans. of Arch[iv] d[er] Pharmazie (West Germany) 1936, v. 274, p. 10-16.

Eichholtz, F.
THE CAUSE OF THE HAFF'S DISEASE (Ursache der Haffkrankheit) tr. by Tatiana Boldyreff. 13 May 59, 9p.
Order from LC or SLA mi$1.80, ph$1.80 59-18139

Trans. of Deutsche Medizinische Wochenschrift (Germany) 1932, v. 58, no. 49, p. 1932-1934.

Fromageot, Pierre, Acher, Roger and others.
PURIFICATION OF THE HORMONES OF THE POSTERIOR LOBE OF OX HYPOHYSIS. II. VASOPRESSIN, tr. by P. M. M. [1959] [13]p. (3 figs. omitted) 17 refs.
Order from SLA mi$2.40, ph$3.30 60-10501

Trans. of Biochim[ica] et Biophys[ica] Acta (Netherlands) 1953, v. 12 [no. 3] p. 424-431.

The method of preparation of ox vasopressin described makes use of silica that has previously adsorbed all the posthypophyseal hormones and has been freed of most of the ocytocine by a first elution. A second elution gives a solution of vasopressin; this is selectively adsorbed by salicylic acid. Further operations consist of countercurrent distribution of the hormone between butanol containing salicylic acid and water, then, finally, a purification by ionophoresis. The product obtained by paper chromatography in various solvents is homogeneous; it does not react with ninhydrin but is easily demonstrated by the reagents of tyrosine, arginine and cystine. The substance appears equally homogeneous with paper ionophoresis. It appears as a light, white powder, slightly hygroscopic, and with an activity of 320 I. U. of vasopressin per mg. The solution from which this powder has been obtained has an activity between 450 and 500 I. U. per mg. The behavior of vasopressin during its countercurrent distribution according to the method of Craig shows some anomalies which are discussed. (Author)

Kaiserling.
HISTOLOGICAL EXAMINATION OF CATS ILL WITH THE HAFF'S DISEASE (Die Histologische Untersuchung Haffkranker Katzen) tr. by Tatiana Boldyreff. 14 May 59, 6p.
Order from LC or SLA mi$1.80, ph$1.80 59-18143

Trans. of Deutsche Medizinische Wochenschrift (Germany) 1932, v. 58, no. 49, p. 1934-1935.

Klein, M[iklos].
ABSORPTION OF ATROPINE, tr. by P. M. M. Rept. no. 2 on Contribution to Absorption from Eye Ointments. 6 Apr 53, 24p. (refs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10506

Trans. in manuscript of [Albrecht von] Graefe's Arch[iv für] Op[h]thalmol[ogie] (Germany) 1933, v. 129 [no. 3] p. 413-425.

(See also 60-10505)

Klein, M[iklos].
ABSORPTION OF HEMATROPINE, PILOCARPINE AND EVERINE, tr. by P. M. M. Rept. no. 3 on Contribution to Absorption from Eye Ointments. 4 Aug 53, 13p. 5 refs.
Order from SLA mi$2.40, ph$3.30 60-10505

Trans. in manuscript of [Albrecht von] Graefe's Arch[iv für] Op[h]thalmol[ogie] (Germany) [1934] v. 131 [no. 1] p. 25-31.

(See also 60-10506)

Klein, N. and Scheffer, L.
EXPERIMENTAL STUDIES OF THE EYE IN REGARD TO ABSORPTION FROM OINTMENTS, tr. by P. M. M. 31 Mar 53, 20p. (3 figs. omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 60-10507

Trans. in manuscript of [Albrecht von] Graefe's] Arch[iv für] Ophthalmol[ogie] (Germany) 1932, v. 128 [no. 3] p. 460-471.

In the absorption from ointments the type of emulsion is of importance. Absorption of iodide was observed only with ointments which form an oil-water emulsion. Absorption from ointments occurs in the same manner as absorptions from drops. The quantities absorbed increase with concentration and prolonged period of application. The water content plays an important part in absorption, as a larger quantity of active substance is absorbed from ointments with a lower water content. (Author)

Lind, Gerhard.
THE SIGNIFICANCE OF BLOOD CHANGES IN LACQUER SPRAYERS. [1959] 22p. (15 tables omitted).
Order from SLA mi$2.70, ph$4.80 60-10009

Trans. of Archiv für Gewerbepathologie und Gewerbehygiene (Germany) 1938, v. 9, p. 141-166.

The results of an examination of 230 sprayers, 32 women and 198 men, are given. 88 of these exhibited more or less prominent symptoms stemming from disturbances of the central nervous system. Blood tests showed evidence of eosinophilic lymphocytosis (present in 109 cases). Since low leukocyte values were found in healthy individuals also, it is considered that lymphocytosis is an ordinary response of factory workers to a complex of influences. There is no reason to require periodic leukocyte counts for sprayers who handle lacquers containing toluol, xylol and various aliphatic compounds. Working with these materials does however involve a serious health hazard because of the other highly toxic properties of these compounds.

Lustig, B. and Wachtel, H.
VITAMINS, HORMONES, AND SUBSTANCES INFLUENCING BLOOD COAGULATION, tr. by P. M. M. Rept. 2 on A Method for Testing Substances for their Chemotherapeutic Properties against Carcinoma. 7 Feb 50, 12p. 19 refs.
Order from SLA mi$2.40, ph$3.30 60-10464

Trans. of Biochem[ische] Z[eitschrift] (Germany) 1934, v. 271, p. 357-369.

Matradze, A. G. and Bernfel'd, M. I.
THE MEDICAL INDUSTRY IN 1959. 3 Nov 59, 5p. JPRS: L-1045-N.
Order from OTS $0.50 59-13995

Trans. of Meditsinskaya Promyshlennost' SSSR, 1959 [v. 13] no. 7, p. 3-6.

The production of pharmaceuticals and surgical supplies in the USSR is hampered by shortages of basic materials such as benzosulfuric acid, caffeine, endocrine products from slaughterhouses, glass for ampoules, surgical steel, etc.

Meier, R., Schuler, W., Desaulles, P.
MECHANISM OF INHIBITION OF THE GROWTH OF THE CONNECTIVE TISSUE THROUGH CORTISONE, tr. by P. M. M. 9 Nov 54, 4p. (4 figs. omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10381

Trans. of Experientia (Switzerland) 1950, v. 6 [no. 12] p. 469-471.

Reichstein, T.
CORTIN; THE ADRENAL CORTICAL HORMONE, I. [1959] 40p. 9 refs.
Order from SLA mi$3.00, ph$6.30 60-10408

Partial trans. (p. 35-59) of Helv[etica] Chim[ica] Acta (Switzerland) 1936, v. 19, p. 29-68.

Rittel, W., Iselin, B. and others.
SYNTHESIS OF HYPERTENSIN II PEPTIDES (Synthese von Hypertensin-II-peptiden). [1959] 3p. 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10717

Trans. of Angewandte Chemie (West Germany) 1957, v. 69 [no. 5] p. 179.

Stöltzner, Wilhelm.
STUDIES OF HAFF'S DISEASE (Untersuchungen über die Haffkrankheit) tr. by Tatiana Boldyreff. 12 May 59, 18p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-18148

Trans. of Deutsche Medizinische Wochenschrift (Germany) 1932, v. 58, no. 49, p. 1929-1932.

Watzka, A.
NEW GONADOTROPIC ANTERIOR PITUITARY HORMONE PREPARATION, tr. by P. M. M. 10 Jan 52, 3p.
Order from SLA mi$1.80, ph$1.80 59-20974

Trans. of Wien[er] Med[izinische] W[o]ch[en]sch[rift] (Austria) 1949, v. 99, no. 27/28] p. 330-331.

Radiobiology

Farber, V. B.
FUNDAMENTAL PRINCIPLES IN THE TREATMENT OF ACUTE RADIATION INJURIES. 2 Nov 59, 11p. 38 refs. JPRS: L-1034-N.
Order from OTS $0.50 59-13975

Trans. of Terapevticheskiy Arkhiv (USSR) 1959, v. 31, no. 8, p. 12-17.

This survey is based on a bibliography drawn exclusively from Soviet sources.

Komissarov, A. N., Komissarova, N. Ye. and Kostitsyn, L. T.
THE SEQUENCE OF REACTIVE CHANGES IN THE BLOOD UNDER THE INFLUENCE OF IONIZING RADIATION. 2 Nov 59, 15p. 13 refs. JPRS: L-1033-N.
Order from OTS $0.50 59-13974

Trans. of Terapevticheskiy Arkhiv (USSR) 1959, v. 31, no. 8, p. 3-11.

Surgery

Joyeux, F.
LYOPHILIZED BONE GRAFTS. STUDY OF HETEROTRANSPLANTATION IN ANIMALS.
18 Dec 57, 24p. (9 figs. 12 illus. omitted) 38 refs.
Order from SLA mi$2.70, ph$4.80 60-10020

Trans. of la Presse Médicale (France) 1952 [v. 60] no. 66, p. 623-637 and 1045-1047.

Küntscher, Gerhard.
POSTOPERATIVE ANEURYSM OF THE HEPATIC ARTERY (Postoperatives Aneurysma der Arteria Hepatica) tr. by J. C. Campbell. Sep 59 [5]p.
Order from SLA mi$1.80, ph$1.80 60-10656

Partial trans. (p. 2694-]696) of Zentralblatt für Chirurgie (Germany) 1937, v. 64 [no. 47] p. 2694-2698.

A case history is presented, describing an aneurysm which occurred following surgery of the biliary tract.

Teneff, Stefano
TRAFFIC ACCIDENTS: PROBLEMS OF MEDICINE AND SURGERY (Gli Incidenti Stradali: Problemi di Medicina e di Chirurgia) [tr. by] W. H. Everhardy. 16 Oct 58, 17p.
Order from LC or SLA mi$2.40, ph$3.30 59-12429

Trans. of [Riforma Medica] (Italy) 1958 [v. 72] [no. 1] [p. 3-15].

This survey article serves as an introduction to a projected series of papers by specialists on various aspects of traffic accidents. Reference is made to the establishment of first aid stations on highways, use of helicopters for transportation of accident victims, hazards of first aid as administered by untrained persons, special requirements of surgery in cases of multiple trauma, etc.

Zoology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 13 (Soviet Abstracts. Biology). 26 Oct 59, 32p. JPRS: 1976-N.
Order from OTS $1.00 59-13989

Contents:
Section P. General and Specialized Zoology. Insects. Abstracts 59026-59241.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Blückmann, A.
RESEARCH OF THE BIOLOGICAL INSTITUTE ON THE ECOLOGY OF THE HERRING FRY IN THE SOUTHERN PART OF THE NORTH SEA. PT. 2 (Die Untersuchungen der Biologischen Anstalt über die Ökologie der Heringsbrut in der Südlichen Nordsee) tr. by Norman Linker and Leslie W. Scattergood. 12 Mar 58 [74]p. 22 refs.
Order from LC or SLA mi$4.50, ph$12.30 59-14292

Trans. of Helgoländer Wissenschaftliche Meeresuntersuchungen (West Germany) 1950, v. 3, p. 171-205.

Catches of larval herring in the region of Helgoland, the Elbe, and Jademouth in November - May 1926/27 to 1933/34 are analyzed.

JOURNAL OF GENERAL CHEMISTRY OF THE USSR, 1958, VOL. 28, NO. 11, P. 2937-3187. 1959, 1v.
Order from CB $10.00, $90.00/year

Trans. of Zhurnal Obshchey Khimii (USSR) 1958, v. 28, no. 11, p. 2909-[3154].

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959, NO. 7, Abstracts 22148-26012 (Soviet Abstracts. Chemistry). 4 Nov 59, 1v. JPRS: 1935-N.
Order from OTS $1.00 59-13928

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the USSR.

USPEKHI KHIMII (USSR) 1959, V. 28 (Progress of Chemistry). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 7, p. 783-901, PB 141 070T-20
No. 8, p. 903-1010, PB 141 070T-21

Consists of abstracts in English.

*ZHURNAL OBSHCHEY KHIMII (USSR) 1959, V. 29, NO. 7, P. 2109-2460 (Journal of General Chemistry). [1959] 1v. SOV-79-29-7-(1-83)/83.
Order from OTS $1.40, $7.50/6 mo. PB 141 075T-21
Foreign $1.65, $9.00/6 mo.

Consists of abstracts in English.

Hilgetag, Günter and Lehmann, Gerhard.
CONTRIBUTIONS TO THE CHEMISTRY OF THIOPHOSPHATES. VIII. OPTICALLY ACTIVE THIOPHOSPHATES BY PARTIAL, ASYMMETRIC SYNTHESIS. [1959] 7p. 7 refs.
Order from SLA mi$1.80, ph$1.80 60-10443

Trans. of Journal für Praktische Chemie (East Germany) 1959, ser. 4, v. 9, no. 1/2, p. 3-6.

Demethylation of O, O-dimethyl-O-p-nitrophenyl thiophosphate by means of strychnine leads to a mixture of diastereomeric methostrychninium-O-methyl-O-p-nitrophenyl thiophosphates. By a suitable choice of solvent the reaction can be directed so that either the dextrorotatory or the levorotatory salt is formed preponderantly. (See also 59-18905, 59-19999, 59-22000, 60-12239)

*ZHURNAL ANALITICHESKOY KHIMII (USSR) 1959, VOL. 14, NO. 4, P. 388-512 (Journal of Analytical Chemistry). [1959] 1v. SOV-75-14-4-(1-30)/30.
Order from OTS $0.90, $5.25/year PB 141 071T-11
Foreign $1.15, $6.75/year

Consists of abstracts in English.

Ettel, Viktor, Pospisil, Jan and Deyl, Zdenek.
CHROMATOGRAPHIC SEPARATION OF MIXTURES OF NITRO SUBSTANCES. [1959] 14p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.80 AEC-tr-3665

Trans. of Chemické Listy (Czechoslovakia) 1958, v. 52, no. 4, p. 623-630.

Conditions were ascertained for the chromatographic separation of aromatic nitro compounds distinguished by the presence of further functional groups. Paper impregnated with formamide was used, and the individual parts of the mixtures were washed out progressively with solvents of increasing polarity. The method was used in the separation of several mixtures obtained as products or by-products of the nitration of toluene.

Götte, H. and Pätze, Doris.
IDENTIFICATION OF URANIUM FISSION PRODUCTS THROUGH PAPER CHROMATOGRAPHY, tr. by Margaret V. Colven. 17 Mar 59 [21]p. 14 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3634

Trans. of Angew[andte] Chem[ie] (West Germany) 1957, v. 69, no. 18/19, p. 608-614.

Although only synthetic mixtures of uranium fission products have been separated by paper chromatography up until now, we have shown that qualitative proof of the heavier elements of pure uranium fission mixtures is possible by simple means as long as the half life exceeds five hours. Uranium samples were used which were irradiated in the reactor for from six days to three months. (Author)

Harms, J. and Jander, G.
DETERMINATION OF FLUORINE PRESENT IN VERY SMALL QUANTITIES BY A CONDUCTOMETRIC METHOD, tr. by Margaret V. Colven. 2 Apr 59 [13]p. 35 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3647

Trans. of Z[ei]tschr[ift für] Elektrochem[ie] (Germany) 1936, v. 42, no. 6 [p. 315-319].

A conductometric determination of larger and smaller amounts of fluorine (from 20 mg down to 12 γ fluorine) was made. The titration procedure took place in a weak acetic acid solution. The presence of chloride, nitrate, sulfate and silicate ions did not hinder the fluorine determination. (Author)

Macek, Karel and Vanecek, Stanislav.
STUDIES OF SYSTEMS WITH STATIONARY FORMAMIDE IN PAPER CHROMATOGRAPHY. [1959] 10p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3666

Trans. of Chemické Listy (Czechoslovakia) 1958, v. 52, no. 4, p. 618-622.

In paper chromatography, in systems with stationary formamide, one must work with pure formamide, the pH of which lies between 8 and 9. The amount of stationary formamide in some common chromatographic papers was determined experimentally, as well as the time factor in the evaporation of the formamide from the paper, the process of washing out the formamide from the paper by the passage of the solvent, and the influence of the pH on the separation of the substances. (Author)

Inorganic Chemistry

PROCESSS FOR PRODUCING TITANIUM TRICHLORIDE IN MIXTURES CONTAINING CHLORIDES OF THE METALS OF THE VI AND VIII GROUPS. [1959] [4]p. 3 refs.
Order from RIS $7.00 RIS rept. 97051

Trans. of German patent application F 24472 (12i, 39) DAS 1 054 974, by Farbwerke Hoechst A. G., Frankfurt-Mainz, filed 27 Nov 57, pub. 16 Apr 59.

The process is characterized in that titanium tetrachloride is caused to react with carbonyls and carbonyl hydrides of metals of groups VI and VIII of the periodic system in the presence of saturated, fluid aliphatic hydrocarbons, suitably at temperatures of from 30 to 80°C, and the reaction product is separated from the hydrocarbon.

PRODUCTION OF SILICON TETRACHLORIDE. [17 Oct 59] 4p.
Order from RIS $8.25 RIS rept. 95957

Trans. of German patent application F 2916 (12i, 38), by Farbenfabriken Bayer, Leverkusen, filed 26 Apr 44, pub. 7 Feb 52.

A method for producing silicon tetrachloride is described, which is characterized in that silicon dioxide or materials containing silicon dioxide are reacted, after addition of carbon, with chlorine and oxygen at temperatures above 600°C and preferably at about 1000°C. The reaction is effected with a chlorine-oxygen mixture which contains at least 5% by volume of oxygen, and preferably 20 to 50% by volume of oxygen. The amount of carbon added to the silicon dioxide, or the material containing this, corresponds to the quantity required for reduction of the oxides in addition to the quantity equivalent to the oxygen content of the gas. The reaction is effected in countercurrent in a shaft furnace into which the molded mixture of the silicon dioxide or the material containing silicon dioxide with charcoal is introduced at the top following a preheating to red heat. The separation of the silicon tetrachloride from the reaction mixture is accomplished, possibly after separation of chlorides of lower volatility, with the aid of adsorbents or by elution with inert liquids.

Ipatieff, W. N. and Freitag, Carl.
OXIDATION OF PHOSPHORUS WITH WATER AT ELEVATED PRESSURES AND TEMPERATURES. [1959] 37p. (16 tables omitted) 48 refs.
Order from SLA mi$3.00, ph$6.30 60-10440

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1933, v. 215 [no. 3/4] p. 388-414.

Mikheyeva, V. I., Mal'tseva, N. N., and Fedneva, E. M.
THE REDUCING POWER OF DIBORANE AND SEVERAL OF ITS DERIVATIVES. [1959] 13p. 16 refs.
Order from RIS $26.00 RIS R 760

Trans. of Zhur[nal] Neorg[anicheskoy] Khimii (USSR) 1958, v. 3, no. 10, p. 2225-2230.

Redox methods of assaying hydride hydrogen have advantages over the hydrogen gas method, in that they are rapid and give reproducible results, if the reactions are quantitative (as with the borohydrides of Li, Na and K, and with the amine complexes of diborane). Results are given for the reactions of oxidants (KIO_3, $KMnO_4$, $AgNO_3$) with the borohydrides of Li, Na and K, with diborane, and with the pyridine-diborane complex. It is demonstrated that hydride hydrogen in the borohydrides may be assayed with KIO_3 or $AgNO_3$. The nature of the cation influences the stability of the borohydride. The experiments become difficult if the borohydride hydrolyses rapidly. It is demonstrated that borohydrides can be assayed potentiometrically with $AgNO_3$, although the system is complex, the redox process is not reversible, and it is difficult to find a suitable electrode. Pyridine-borine is used to show that the iodate method of assaying active hydrogen can be applied to the amine complexes of diborane. The reactions of $AgNO_3$ and $KMnO_4$ in weakly alkaline solution are not suitable for use in assaying the pyridine complex quantitatively. Diborane does not react quantitatively with aqueous solutions of oxidants; hydrolysis is the main reaction. (Author)

Yasue, Taisuke, Hosogai, Kemkichi, and Koyanagi, Ryuichi.
DRY METHOD FOR PROCESSING RARE EARTH ELEMENT FLUORIDES. [1959] [12]p.
Order from LC or SLA mi$2.40, ph$3.30 60-10089

Trans. of Japanese patent application 27-1713, patent application pub. 28-4915, pub. 30 Sep 53, appl. 8 Feb 52, by Nihon Denko Kabushiki Gaisha, Tokyo.

This invention describes a dry method of processing rare earth element fluorides which increases the purity and improves the particle bulk specific gravity. To rare earth element fluoride manufactured by the

wet method, about 5 per cent of alkali fluoride is added and mixed thoroughly. Oxidation is then prevented by roasting the mixture in a protected carbon or graphite crucible at temperatures about 1100°C.

Organic Chemistry

ACCELERATORS FOR POLYMERIZATION OF UNSATURATED POLYESTER RESINS. [1959] 4p. 1 ref.
Order from RIS $4.50 RIS rept. 6298

Trans. of German patent application C 10 439 (25/01, 39c) by Chemische Werke Huels A. G., Marl, filed 18 Dec 54, pub. 22 Dec 55.

The use of 4-aryl-2-hydroxytetronimides as accelerators for the polymerization of unsaturated polyester resins is proposed.

FILM-FORMING MIXTURES FROM CRUDE CELLULOSE ETHERS. [1959] 5p. 1 ref.
Order from RIS $7.25 RIS rept. 6479

Trans. of German patent application K 22 148 (39b, 12/01) DAS 1 011 145, filed 7 Mar 53, pub. 27 June 57, by Kalle & Co. A. G., Wiesbaden, Biebrich.

A conventionally obtained fibrous, more or less moist, crude cellulose ether is mixed with the appropriate quantity of sulfuric acid or any other commercially usable substance capable of neutralizing the free alkalis and then combining with the desired quantity of a solid water-soluble sulfamic acid, e.g., its sodium salt. The crude etherification product of the cellulose can first be combined with the water-soluble salt of the amidosulfonic acid, and the free alkalis can be bound afterwards with the introduction of a neutralizing agent. The water soluble salt of the sulfamic acid can occasionally be added advantageously to the fibrous crude ether product either before or after neutralization in the form of an aqueous mixture. The mixture can also be prepared as a aqueous solution, which after removal of the solvent, leaves films with significantly better stretch characteristics than the aqueous solutions of crude cellulose ethers that have only been freed of unbound alkali. The improved stretch is advantageous in applications where the cellulose ether is used to form more or less uneven films, such as in color coatings, where coating films of great elasticity are required, or in applications as sizing materials.

MODIFIED HENKEL PROCESS GIVING HIGHER YIELDS AND DIFFERENT ISOMERS. [1959] 8p.
Order from RIS $15.00 RIS rept. 96939

Trans. of German patent application H 29 393 (12o, 14) DAS 1 032 245, by Henkel & Cie. G. m. b. H., Düsseldorf-Holthausen, filed 20 Feb 57, pub. 19 June 58.

A process is described for producing aromatic di- and polycarboxylic acids or their salts or derivatives by converting the potassium salts of aromatic di- or polycarboxylic acids by heating in the presence of metals or metal compounds, the resulting salts being transformed if necessary into the free acids or their derivatives. The process is characterized in that the heating is carried out in the presence of potassium cyanate. The initial material is dipotassium-o-phthalate. The catalysts used are compounds of the metals, cadmium, zinc, lead, iron or mercury which are soluble in potassium cyanate. The heating is carried out under pressure in the presence of carbon dioxide. The reaction is carried out at temperatures above 320°C. The potassium salt of the carboxylic acid serving as initial material and the catalyst are dissolved in a melt of potassium cyanate.

NEW KETENE ADDITION PRODUCTS. [1959] [6]p. 1 ref.
Order from RIS $10.75 RIS rept. 96720

Trans. of German patent application F 17 878 (12o, 22) by Farbenfabriken Bayer, A. G., Leverkusen, filed 6 July 55, pub. 4 Oct 56.

A process for preparing addition products is described characterized in that ketenes or diketenes are reacted with carbodiimides. The reaction takes place at room temperature or at a moderately elevated temperature. Copper compounds, especially cuprous chloride, are used as catalysts for the reaction.

PROCESS FOR MANUFACTURING GRANULAR VINYL POLYMERS. [1959] 5p.
Order from RIS $9.00 RIS rept. 6300

Trans. of German patent application C 6425 (39c, 25/01) filed 18 Sep 52, pub. 18 Aug 55, by Chemische Werke Huels A. G., Marl.

A process is proposed for manufacturing granular polymers from water-insoluble vinyl compounds or mixtures thereof by polymerization in aqueous suspension and in the presence of oil-soluble activators, with mechanical agitation. The process is characterized in that the polymerization is effected in the presence of water which contains inert, water-insoluble inorganic salts and the specific gravity of which is approximately equal to the specific gravity of the vinyl compound.

PROCESS FOR MANUFACTURING LACTAMS. [1959] 7p.
Order from RIS $12.25 RIS rept. 54080

Trans. of German patent application B 40 490 (12p, 5) DAS 1 024 515, filed 2 June 56, pub. 20 Feb 58, by Badische Anilin- & Soda-Fabrik A. G., Ludwigshafen/Rhine.

A process for manufacturing lactams from cycloaliphatic ketoximes by treatment with sulfuric acid and or oleum is described, characterized in that instead of the free cycloaliphatic ketoximes their hydrohalides are used.

PROCESS FOR PRODUCING DICYANOGEN AND CARBON DISULFIDE. [1959] 4p.
Order from RIS $6.00 RIS rept. 97049

Trans. of German patent application D 27 374 (12k, 11) DAS 1 052 380, by Deutsche Gold- und Silber-Scheide-anstalt, Frankfurt, filed 7 Feb 58, pub. 12 Mar 59.

A process for producing dicyanogen and carbon disulfide is described, characterized in that a symmetric triazine derivative of the empirical formula $C_6N_6S_3$ is heated to temperatures ranging up to about 750 or 850°C. The initially evolved carbon disulfide is isolated separately from the subsequently evolving dicyanogen. The heating is carried out in the absence of elemental oxygen and water.

PROCESS FOR PRODUCING NEW, POLYAMIDE-LIKE POLYCONDENSATES. 30 Nov 59, 6p. 1 ref.
Order from RIS $11.00 RIS rept. 6466

Trans. of German patent application P 10 489 (39c10) DAS 1 013 425, filed 17 Sep 53, pub. 8 Aug 57, by Phrix-Werke A. G., Hamburg.

The process is characterized in that (1) a pyromucic acid amide containing at least one hydrogen atom at the nitrogen is converted with a low aldehyde or a low aldehyde yielding substance to the corresponding N-hydroxyalkyl compound and polycondensed, (2) conversion of pyromucic acid with the aldehyde is carried out in the presence of an alkaline agent, (3) the pyromucic acid is converted with paraformaldehyde at elevated temperatures, (4) polycondensation of the pyromucic acid that has been hydroxyalkylated at the nitrogen is carried out by heating to temperatures of from 120° -230°C, preferably between 180° and 200°, and (5) polycondensation of the pyromucic acid that has been hydroxyalkylated at the nitrogen is carried out by introduction of its glacial acetic acid solution into cooled concentrated sulfuric acid.

PROCESS FOR PRODUCING WATER SOLUBLE REACTION PRODUCTS FROM THE POLYMERIZATION OF ACRYLONITRILES. [17 Oct 59] 5p.
Order from RIS $10.00 RIS rept. 61059

Trans. of German patent application B 41 178 (39c, 25/01) DAS 1 052 685, by Badische Anilin- & Soda-Fabrik, AG, Ludwigshafen, filed 27 July 56, pub. 12 Mar 59.

A process is described for producing water soluble polymerization products of acrylonitriles, characterized in that the polymerizate is made to react with lower amino alcohols at temperatures of about 80°C or higher. The reaction is carried out in aqueous lower aliphatic amino alcohols.

PROCESS FOR SUSPENSION POLYMERIZATION OF VINYL COMPOUNDS. [17 Oct 59] 5p.
Order from RIS $7.00 RIS rept. 61060

Trans. of German patent application D 26 858 (39c, 25/01) DAS 1 056 830, by Dynamit, A. G., Troisdorf, Cologne, filed 19 Nov 57, pub. 6 May 59.

A process is given for suspension polymerization of cetyl compounds by means of the half ester of the polymerization mixture of styrol and maleic acid anhydride. The process is characterized in that the water-soluble ammonium salt of the half ester is used as a suspension supplement.

2-OXYCARBAZOL-3-CARBOXYLIC ACID (ACYLIC ACID); PROCESS OF MANUFACTURE. [1959] 5p. 1 ref.
Order from RIS $3.00 RIS rept. 95523

Trans. of unidentified mono., I. G. Farbenindustrie A. G., Leverkusen, Germany, PB 74051.

Action of carbon dioxide on the potassium salt of 2-oxycarbazol yields 2-oxycarbazol-3-carboxylic acid in addition to about 10% of 2-oxycarbazol-1-carboxylic acid. The 2-3-acid is separated from the 2-1-acid by salting-out of the sodium salt. The apparatus used is the same as that used for salicylic acid (Research Information Service rept. 95563).

Bankowski, Otto, Köthnig, Martin, and Klemt, Harry.
PROCESS FOR OBTAINING PURE AROMATICS FROM TECHNOLOGIC HYDROCARBON MIXTURES, tr. by Ernst M. Cohn. 25 Sep 59, 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-22337

Trans. of [East German] patent 13,661, cl. 23b, gr. 1/05, ref. WP 23b/29382, pat. 9 Apr 54, issued 5 Aug 57.

High yields of pure aromatics can be obtained economically from mixtures of technologic hydrocarbons by removing the aromatics with a primary extractant, removing them from this primary extractant by a secondary one, and separating them from the secondary one by distillation. Primary extractants are formamide or its N-alkylated derivatives. Formamide and its derivatives are preferably used mixed with water to increase the selective absorption of aromatics. The amount of water needed is less than 20 percent. The secondary extraction also can take place in any desired manner. The secondary extractant can be particularly butane, pentane, or technologic hydrocarbon mixtures that boil above 200°C. All substances may be used that are good solvents for aromatic hydrocarbons, that are not miscible with the primary extractant, that are sparingly soluble or insoluble in it, and whose boiling points are far enough below or above the boiling range of the desired aromatics.

Angeli, A., Angelico, F., and Calvello, E.
SOME DERIVATIVES OF PYRROLE. [1959] [4]p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10071

Trans. of Accademia [Nazionale] dei Lincei. [Classe di Scienze Fisiche, Matematiche e Naturali. Memorie] (Italy) 1902, v. 11, Ser. 5, p. 16-17.

See also 60-10070

Angelico, F. and Monforte, F.
ISONITROSO DERIVATIVE OF THE β-CARBONIC ACID OF α-, α'-DIPHENYL PYRROLE. [1959] [4]p.
Order from SLA mi$1.80, ph$1.80 60-10057

Partial trans. (p. 799-800). of Gazzetta Chimica Italiana, 1923, v. 53 [p. 795]-800.

Angelico, Francesco.
TRANSFORMATIONS OF THE NITROSO PYRROLES. [1959] [9]p. 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10070

Trans. of Accademia [Nazionale] dei Lincei. [Classe di Scienze Fisiche, Matematiche e Naturali. Memorie] (Italy) 1905, v. 14, Ser. 5, p. 699-703.

See also 60-10071.

Arbuzov, B. A., Vinokurova, G. M., and Perfil'yeva, I. A.
THE ADDITION OF PHENYLPHOSPHINE TO UNSATURATED COMPOUNDS. 12 Nov 59 [8]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10389

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 127 [no. 6] p. 1217-1220.
Another translation is available from ATS $5.50 as ATS-37L35R [1959] 5p.

Experiments showed that phenylphosphine adds readily, in the absence of catalysts, to acrylates and methyacrylates, on heating the reagents. Together with the addition products of phenylphosphine, due to oxidation of the tertiary phosphines formed, there was found a small amount of the oxide of the corresponding phosphines. The addition of phenylphosphine to allyl alcohol takes place under the action of catalysts producing free radicals (azobisisobutyronitrile). The reactions carried out can be represented by

$$C_6H_5PH_2 + 2CH_2=\overset{R}{\overset{|}{C}}-R \rightarrow C_6H_5P(CH_2-\overset{R}{\overset{|}{C}}H-R)_2,$$

where R= $COOCH_3$, $COOC_2H_5$, $COOC_3H_7$, $COOC_4H_9$, and CH_2OH; and R' = $-CH_3$ or H. The compounds and their constants are tabulated. In order to obtain different derivatives, Mann's experiments (J. Chem. Soc. 1952: 4453) on the addition of phenylphosphine to acrylonitrile were repeated and (2-cyanoethyl)phenylphosphine, bis(2-cyanoethyl)phenylphosphine and its oxide were isolated. Reduction of bis(2-cyanoethyl)phenylphosphine with $LiAlH_4$ gave bis(3-aminopropyl)phenylphosphine. As derivatives of trivalent P, the tertiary phosphines obtained were readily oxidized by atmospheric oxygen to the corresponding phosphine oxides and additional sulfides. The constants of some of the phosphine oxides and sulfides obtained are tabulated.

Béhal, A.
ISOLATION AND CHARACTERIZATION OF ALCOHOLS AS ALLOPHENATES. 13 Mar 57, 5p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10360

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1919, v. 168, p. 945-947.

Blekkingh, J. J. A.
ELAIDINIZATION OF DERIVATIVES OF UNSATURATED ACIDS, tr. by P. M. M. 22 Jan 54, 14p. (5 figs. omitted) 31 refs.
Order from SLA mi$2.40, ph$3.30 60-10337

Trans. from Soc[iété] Chim[ique de] France. Bull[etin] 1950 [5 ser, v. 17, no. 3/4] p. 278-282.

The mechanism of elaidinization and inverse transformation proposed is based on the presence in the catalyst of an atom having more than one type of valence. Two atoms of catalyst unite in trans positions on the double bond, the hydrogen atoms shift, the catalyst is removed, and a rotation of 180° of one of the carbon atoms results in changing the double bond into another form. Parallel reactions such as the formation of stable addition products or conjugated double bonds may be produced owing to the fact that it is impossible for one of the carbon atoms of the trans A form to rotate 180°. Assuming a similar probability in regard to the rotations possible for one atom in relation to each of the others, it may be concluded that in the presence of unsaturated derivatives of monoacids, the ratio of trans : cis would be 2:1 and that for unsaturated derivatives of diacids, the ratios of trans, trans : cis, trans : trans, cis : cis, cis would be 8/3:1:1:1. The elaidinization procedure was determined under these conditions and is in accord with practical experience. (Extracted from the report)

Brini, Mathilde.
LONG-CHAIN ALIPHATIC COMPOUNDS. I. SYNTHESIS, tr. by P. M. M. 8 May 56 [17]p.
Order from SLA mi$2.40, ph$3.30 60-10327

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1955 [5 ser. v. 22] p. 339-345.

The Blaise synthesis of nitriles permits the preparation of ketones with 24 to 33 carbon atoms and diketones with 40, 43 and 44 carbon atoms. The addition of magnesium to the carbonyl group produced several tertiary alcohols and bitertiary glycols, particularly a compound with 80 carbon atoms. (Author)

Hilgetag, Günter and Teichmann, Herbert.
CONTRIBUTIONS TOWARD THE CHEMISTRY OF THIOPHOSPHATES. PT. III. STUDY OF SODIUM-O, S-DIMETHYL THIOPHOSPHATE. [1959] 13p. 16 refs.
Order from RIS $18.00 RIS JPC-21

Trans. of Journal für Praktische Chemie (East Germany) 1959, ser. 4, v. 8, no. 1/2, p. 97-103. Another translation is available from ATS $8.55 as ATS-30L32G [1959] 7p.

A previously described method (W. G. Emmett and H. O. Jones, J. Chem. Soc. London 99: 713, 1911) for the preparation of sodium-O, S-dimethyl thiophosphate does not lead to a homogeneous product. The pure compound can be obtained from trimethylthionophosphate or thiolphosphate and sodium iodide. O, S-dimethyl thiophosphoric acid is described. (Author) (See also 59-18902, 59-18904, 59-18905)

Imoto, M[inoru, Otsu, Takayushi, and Higuchi, Taiichi].
VINYL POLYMERIZATION. PT. 36. COPOLYMERIZATION OF ACRYLAMIDE WITH ACRYLIC ACID. [1959] 14p. 24 refs.
Order from SLA mi$2.40, ph$3.30 60-10116

Trans. of Kōbunshi Kagaku (Japan) 1959, v. 16, no. 169, p. 324-329.

Kamogawa, Hiroyoshi and Sekiya, Toshii.
THE EMULSION COPOLYMERIZATION OF N-METHYLOLACRYLAMIDE. Rept. 11 of Studies on Fiber-Treatment Agents. [1959] 13p. 4 refs.
Order from SLA mi$2.40, ph$3.30 60-10446

Trans. of Kogyo Kagaku Zasshi (Japan) 1959, v. 62, no. 8, p. 1117-1119.

In emulsion copolymerizations involving N-methylolacrylamide as one component, ethyl acrylate was selected as an oil-layer monomer possessing solubilizing power toward the emulsion polymer particles formed and acrylonitrile was selected as one not possessing solubilizing power. An investigation was made of the polymerization rate-time curves and of the composition of the initial period copolymers. For the methylolacrylamide-ethyl acrylate system, $r_1 = r_2 = 1.4 \pm 0.2$ was obtained for the solution polymerization in ethanol: for the methylolacrylamide-acrylonitrile system $r_1 = 1.2 \pm 0.1$ and $r_2 = 0.7 \pm 0.1$ was obtained. When an oil-layer existed in emulsion copolymerization, a straight-line portion was seen in the polymerization rate-time curve, and it was suspected that the propagation reaction took place between monomer-polymer particles, as suggested by the Smith-Ewart theory. The influence of stirring was also great in the case of ethyl acrylate, since the contact-catalytic property of the oil layer toward the emulsion polymer particles produced had a major influence. Also, in the case of acrylonitrile the values were approximately the same as the r_1 and r_2 of a homogeneous polymerization system at concentrations too low to permit the existence of an oil layer, but when an oil layer existed, the acrylonitrile component became richer than the theoretical value derived from the water layer. In the methylolacrylamide-acrylic acid ester system, on the other hand, the initial period polymer composition underwent special changes depending on changes of the monomer composition, possibly indicating essential changes of the r_1 and r_2. (Lectured at the Autumn Session of the Joint Research Conference of Societies Related to Chemistry, November, 1958.)

Kern, W.
CHEMICAL REACTIONS OF SYNTHETIC POLYMERS. [1959] 23p. 68 refs.
Order from SLA mi$2.70, ph$4.80 60-10075

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1957, v. 22, p. 126-140.

Representations are presented to show especially that, by reactions with synthetic polymers, many macromolecular substances can be prepared which are not directly obtainable by polymerization or polycondensation.

Khomikovskiy, P. M.
THE MECHANISM OF EMULSION POLYMERIZATION: POLYMERIZATION OF VINYL CYANIDE AND METHYLMETHACRYLATES. [1959] 11p. 22 refs.
Order from RIS $12.00 RIS R 560

Trans. from Akademiya Nauk SSSR. [Doklady] 1948, v. 60, no. 4.

Studies were made of the polymerization of vinyl cyanide in palmitate solutions, and potassium oleate in the presence of potassium persulfate, in order to ascertain the processes that occur in the emulsifier ion when polymerization takes place in emulsions. The experiments were conducted in the absence of oxygen. The speed of polymerization is lower in saponified solutions than in water. It decreases as the degree of saponification increases. It increases with increasing monomer content of the micelle (at 60°C the solubility of vinyl cyanide is 8.8% by weight in water and 10.5% and 12.3%, respectively, in 5% and 8% by weight solutions of potassium oleate). Energy values for reactions in aqueous and saponified solutions are very similar. The initial speed of polymerization in water is approximately 2.5 times the monomer concentration. The inclusion of monomers in the micelles of emulsions, in the presence of soluble peroxides, retard polymerization. Polymerization is not always accelerated in emulsifiers; however, the acceleration is connected with a swelling or dispersion of the polymer within the monomer molecule. Polymerization probably occurs altogether as a phenomenon of molecular aqueous solution in the case of polar polymers that do not expand and diffuse in their monomers (e.g. vinyl cyanide, vinylidene chloride, etc). The polymer particles that separate out are not stabilized by saponification, and form large aggregates easily. The drops of emulsion act as stabilizers of the monomer concentration in aqueous solutions.

Kircher, René.
PREPARATION OF NITRILES FROM FATTY ACIDS BY FLUIDIFICATION, tr. by P. M. M. 11 July 56, 4p. (1 fig. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10326

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1955 [5 ser, v. 22, no. 3] p. 455-456.

The preparation involves an intermediate stage in the preparation of aliphatic amines having 8 to 18 carbon atoms, the salts of which are good flotation reagents for the separation of KCl from sylvinite. These

amines may be obtained from natural fatty acids which are converted successively into nitriles then to amines. The method consists of reacting ammonia in the vapor phase with fatty acid in the presence of a dehydration catalyst

$$RCOOH + NH_3 \longrightarrow RCN + 2H_2O.$$

Kitao, Teijiro, Kuroki, Nobuhiko, and Konishi, Kenzo.
ON THE SYNTHESIS OF ARYLVINYLSULPHONES AND THEIR REACTIVE PROPERTIES. Rept. no. 4 of Studies on Reactive Dyes. [1959] 16p. 23 refs.
Order from SLA mi$2.40, ph$3.30 60-10444

Trans. of Kogyo Kagaku Zasshi (Japan) 1959, v. 62, no. 6, p. 825-828.

Aryl-β-chloroethylsulfones are obtained by reacting ethylene chlorohydrin with corresponding aryl mercaptans or by hydrogen peroxide-oxidizing the chloroethyl sulfide which is obtained by thionyl chloride- or phosphorus pentachloride-chlorinating the β-oxyethyl sulfide which is obtained by treating compounds possessing an active halogen with mercaptoethanol. They are also obtained by treating corresponding arylsulfinic acids with ethylene chlorohydrin. When β-chloroethylsulfones are dehydrochlorinated in an alkaline state, arylvinylsulfones are synthesized. It has been ascertained that the substituted phenyl-β-chloroethylsulfones are substituted phenylvinylsulfones which are synthesized in this manner undergo Michaelis-like addition reactions with alcohols such as methanol, ethanol, and butanol in a state of weak alkalinity. Also, morpholine was used as the amine, and we ascertained that similar addition reactions are readily undergone with amines as well. (Author) (Lectured at the Ninth Annual Conference of the Chemical Society of Japan, Kyoto, April 1956.)

Kolesnikor, H. S., Suprun, A. P., and Soboleva, T. A.
CARBOCHAIN POLYMERS AND COPOLYMERS. XIV. COPOLYMERIZATION OF ETHYLENE WITH UNSATURATED COMPOUNDS IN THE PRESENCE OF ALKYL BORON COMPOUNDS. [1959] 8p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10042

Trans. of Vysokomolek[ulyarnyye] So[yedineniya (USSR) 1959, v. 1, no. 4, p. 627-634.

Results obtained from the copolymerization of ethylene with acrylonitrile, vinyl chloride, and styrene catalyzed by triisobutyl boron are given. Acrylonitrile was shown to possess greater activity in the copolymerization reaction than ethylene. Fusible copolymers were obtained containing 44 mole % ethylene and 56 mole % acrylonitrile. Copolymers of various compositions with a broad spectrum of properties were obtained from ethylene and vinyl chloride. Ethylene was shown to possess a greater activity than vinyl chloride.

Krebs, Otto.
FATTY ACID DISTILLATION; A COMPARISON OF INTERMITTENT AND CONTINUOUS OPERATION, tr. by G. G. S. 25 May 51, 3p.
Order from SLA mi$1.80, ph$1.80 59-20785

Partial trans. (p. 442-443) of Teer und Bitumen (Germany) 1930, v. 28, no. [26] p. 421-424 and no. 27, p. 440-443.

Loury, M[aurice].
SYNTHESIS OF CHOLINE ESTERS; DIMORPHISM OF THE HIGHER TERMS. 4 Feb 59, 4p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10373

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1939, v. 209, p. 682-684.

Maillard, Alfred and Arbogast, Romain.
NITRATION OF ALIPHATIC CHAINS. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10367

Trans. of [Academie des Sciences, Paris[. Compt[es] Rend[us] (France) 1950, v. 231 [no. 22] p. 1237-1238.

The nitration of aliphatic chains leads to the formation of derivatives containing from one to two nitro groups per molecule; it may be accompanied by an oxidation reaction, with indroduction of carboxyl groups and probably hydroxyl groups in the chain. (Author)

[Mandel'baum, Ya. A., Mel'nikov, N. N., and Zaks, P. G.].
ORGANIC INSECTOFUNGICIDES. XXXVII. THE SYNTHESIS OF SOME MIXED ESTERS OF THIO- AND DITHIOPHOSPHORIC ACIDS. [1959] [5]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10387

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29[91] [no. 1] p. 283-285.

Mixed esters of thio- and dithiophosphoric acids were synthesized, with general formulas

$$(C_2H_5O)_2P(=S)XCH_2CON(=R')(R''),$$

$$(C_2H_5O)_2P(=S)XCH_2COOAr,$$

and

$$(C_2H_5O)_2P(=S)XCH_2COSR.$$

The synthesis of these compounds was accomplished by the reaction of salts of diethyl thiophosphoric and diethyl dithiophosphoric acids with the corresponding derivatives of monochloroacetic and monochlorothioacetic acids. The reaction was carried out in acetone, with prolonged heating of the reacting solution. In all cases the salts of diethyl thiophosphoric acid gave thione isomers of esters of thiophosphoric acid, as was expected on the basis of studies by M. I. Kabachnik (Zhur. Obshchey Khim. 25: 1924, 1955) on the tautomerism of thiophosphoric acid. All compounds of this type were subsequently found to be inferior to O,O-diethyl O-4-nitrophenyl thiophosphate as a contact insecticide. The most active contact insecticide of the group was O, O-diethyl O-(4-nitrophenoxycarbonyl)methyl thiophate. O, O-Diethyl O-diethylcarbamoylmethyl thiophosphate was found to be a satisfactorily active systemic acaricide.

Metze, Reinhold and Meyer, Siegfried.
ON 1,2,4-TRIAZINES. V. SIDE-CHAIN OXIDATIONS OF THE 1,2,4-TRIAZINE RING (Über 1,2,4-Triazine. V. Seitenkettenoxydationen am 1,2,4-Triazinring), tr. by P. C. C. 16 Mar 59, 9p. 14 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-14708

Trans. of Chemische Berichte (West Germany) 1957, v. 90, no. 4, p. 481-485.

Moschatos, H. and Tollens, B.
ADDITION PRODUCTS AND COMPOUNDS OF HEXAMETHYLENE AMINES. [1959] 13p. 21 refs.
Order from SLA mi$2.40, ph$3.30 60-10317

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) [1893] v. 272 [no. 3] p. 271-288.

Natta, G. [Porri, L.] and others.
STEREOSPECIFIC POLYMERIZATIONS OF CONJUGATED DIOLEFINS. NOTE IV. PREPARATION OF SYNDIOTACTIC 1, 2-POLYBUTADIENE. [1959] [18]p. 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10487

Trans. of [la] Chimica e l'Industria (Italy) 1959, v. 41 [no. 6] p. 526-533.

Crystalline polymers having a 1, 2 configuration (>90%) and syndiotactic structure have been obtained from butadiene by means of a catalyst system consisting of triethylaluminum - vanadium triacetyl acetonate. The crude polymerization products contain, aside from crystalline polymers, polymers that are amorphous to x-rays at room temperature, and also have a predominantly 1, 2 configuration (70 - 80%). By varying the Al/V ratio, products may be obtained that consist predominantly of amorphous polymers (Al/V < about 5) or products that consist predominantly of crystalline syndiotactic polymers (Al/V > about 9). Aged catalysts yield products richer in crystalline fractions than those obtained with fresh catalysts. The impurities present in the monomer and in the reagents noticeably decrease the stereospecificity of the process. Some data are given on the crystallinity of the syndiotactic polybutadiene obtained with the catalysts prepared from vanadium triacetyl acetonate. (Author) (See also 59-17384 or 59-20934)

Natta, G[iulio].
KINETIC PRESENTATION OF THE STUDY OF THE FORMATION OF STEREOBLOCK POLYMERS. [1959] 13p. (2 figs. omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 60-10044

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fis[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1958 [ser. 8] v. 24 [no. 3] p. 246-253.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-10809 [1958] 15p.

Natta, Giulio, Porri, Lido, and Fiore, Leonardo.
STEREOSPECIFIC POLYMERIZATION OF CONJUGATED DIOLEFINES WITH CATALYSTS CONTAINING FORMS OF $TiCl_3$ OF DIFFERENT LATTICE STRUCTURE, tr. by W. B. [1959] 24p. 13 refs.
Order from SLA mi$2.70, ph$4.80 60-10134

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1959, v. 89 [no. 3] p. 761-774.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-20016 [1959] 15p.

Naudet, M.
SOME PROPERTIES OF THE CONDENSATION PRODUCTS OF AMINO AND FATTY ACIDS, tr. by P. M. M. 14 Mar 52, 13p. 14 refs.
Order from SLA mi$2.40, ph$3.30 60-10336

Trans. in manuscript of Soc[iété] Chim[ique de] France. Bull[etin] 1950 [5 ser.] v. 17 [no. 3/4] p. 358-361.

It is shown that the fatty amides of the amino acids are somewhat stronger acids than the corresponding fatty acids. The effect produced by these amides on aqueous surface tension and on the interfacial tension between water and toluene is measured, and this effect is compared with the effect produced by soaps and alcohol sulfates and fatty oxyethylamide sulfates. (Author)

Pasquon, I. [Giachetti, E., and Giuffre, L.].
CHARACTERISTICS OF THE CATALYST SYSTEM $VOCL_3$-Al-$[CH_2CH(CH_3)_2]_3$. [Article] I on Coordinative Anionic Polymerization of Propylene to High-Molecular Atactic Polymers and Stereoblocks. [1959] [15]p. 24 refs.
Order from SLA mi$2.40, ph$3.30 59-20933

Trans. of [la] Chimica e l'Industria (Italy) 1959, v. 41 [no. 4] p. 281-286.
Other translations are available from SLA mi$2.40, ph$3.30 as 59-17205 [1959] 15p and from SLA mi$2.70, ph$4.80 as 59-20221 [1959] 21p.

Pasquon, Italo.
PROPERTIES OF POLYPROPYLENE OBTAINED IN THE PRESENCE OF THE CATALYST SYSTEM $VOCl_3$-Al$[CH_2CH(CH_3)_2]_3$. [Note] no. 3 on Anionic Coordination Polymerization of Propylene to Atactic Polymers and Stereoblocks of High Molecular Weight [1959] [15]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-20932

Trans. of [la] Chimica e [l']Industria (Italy) 1959, v. 41, no. 6, p. 534-539.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-20850 [1959] 15p.

Polypropylene, obtained between -10° and 70°C in the presence of the catalyst system $VOCl_3$-Al$[CH_2CH(CH_3)_2]_3$ was found to contain up to 58% of atactic polymer (soluble in diethyl ether) and approximately 20% of stereoblock polymer (soluble in n-heptane), the remainder being soluble in n-octane.

The steric composition of the polymer was dependent on the method of catalyst preparation but did not depend appreciably on the Al/V ratio for ratios ranging between 1 and 4. The molecular weights of the isolated polymer fractions were higher than 200,000 for the ether extracts and up to 500,000 for the n-heptane extracts. These molecular weights did not vary appreciably with temperature. These molecular weights are regulated by a chain transfer process, the rate of which is first order with respect to monomer concentration, and by at least one other step whose rate is a function of catalyst concentration. (See also 59-17205)

Petrov, A. D., Mironov, V. G., and Dzhurinskaya, N. G.
THE ADDITION OF TRICHLOROGERMANE TO ACETYLENE, OLEFINS, AND THEIR DERIVATIVES IN THE ABSENCE OF CATALYSTS. 10 Nov 59 [8]p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10391

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 128 [no. 2] p. 302-304.

Trichlorogermane, without any catalysts or initiators, was found to add energetically, at the moment of contact of the components (with evolution of a large amount of heat), even at room temperature, to olefins (ethylene to 1-octene), acetylene, acrylonitrile, allyl acetate, allyl chloride, methallyl chloride, and even to vinyl chloride and (2-chlorovinyl) trichlorosilane. The yields and properties of the compounds obtained are tabulated. The yields of addition products were much higher than those reported in the literature for addition in the presence of catalysts. In a great variety of addition reactions, trichlorogermane is much more active than trichlorosilane.

Piepenbrink, H.-F.
1,4-DICYANO-2-BUTENE. [1959] 18p.
Order from SLA mi$2.40, ph$3.30 60-10151

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1951] v. 572, p. 83-95.

Addition products (diene synthesis; halogenation; addition of OH, SH-, and NH compounds; and addition of hydrogen cyanide) and saponification products are described.

Runge, Franz, El-Hewehi, Zaki and Hempel, Dieter.
s-TRITHIANE (1,3,5-TRITHIACYCLOHEXANE). 17 Oct 59, 19p. 49 refs.
Order from RIS $29.00 RIS JPC 10

Trans. of Journal für Praktische Chemie (East Germany) 1959, ser. 4, v. 8, no. 1/2, p. 1-16.

Sandulesco, G. and Girard, A.
ON THE SYNTHESIS OF AROMATIC OXYKETONES. [1959] 5p.
Order from SLA mi$1.80, ph$1.80 60-10319

Partial trans. (p. 1301-1303 and p. 1306-1310) of Société Chimique de France. Bulletin, 1930, 4 ser, v. 47, p. 1300-1314.

Sarasin, J. and Wegmann, E.
SYNTHESIS OF HETEROXANTHINE STARTING WITH AN IMIDAZOL DERIVATIVE. [1959] [9]p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-20983

Trans. of Helvetica Chimica Acta (Switzerland) 1924, v. 7, p. 713-717.

Schulz, G. V. and Horbach, A.
THE MOLECULAR CONSTANTS OF POLYCARBONATES IN SOLUTION. [23 Oct 59] 30p. 43 refs.
Order from RIS $40.00 RIS rept. 61052

Trans. of Makromolekulare Chemie (Switzerland) 1959, v. 29, no. 1/2, p. 93-116.
Another translation is available from ATS $13.75 as ATS-17L31G [1959] 21p.

Measurements were made of the diffusion and sedimentation constants, the viscosity, the osmotic pressure and the light scatter of a series of polycarbonate fractions in two different solvents. From this a calibrating curve for visco-molecular weight determinations was derived, and inhomogeneity of the fractions was calculated from the differences of mean molecular weights. The distance between the molecular coils was calculated from the friction data and light scatter data, and the measured second virial coefficients were used for reduction to a neutral solvent. The volume requirements of the polycarbonate molecules in solution are greater than those of the comparable polyvinyl compounds and somewhat smaller than those of cellulose derivatives. The effects of the chain member length and the hindrance to rotation are considered in comparison with polymethyl methacrylates. (Author)

Shemyakin, M. M. and Shchukina, I. A.
HYDROLYTIC OXIDATION OF ORGANIC SUBSTANCES. [1959] 40p. 99 refs.
Order from RIS $75.00 RIS R-755

Trans. of Uspekhi Khimii (USSR) 1957, v. 26, p. 528-553.

Discussions are presented on (1) hydrolytic cleavage of carbon-carbon bonds, (2) oxidative-hydrolytic decomposition of carbon-carbon bonds, (3) secondary and side reactions, and (4) examples of hydrolytic oxidation of organic compounds.

Sianesi, D. [Rampichini, M., and Danusso, F.].
STEREOSPECIFIC POLYMERIZATION OF AROMATIC VINYL MONOMERS. I. ALKYL-SUBSTITUTED STYRENES. [1959] [15]p. 12 refs.
Order from SLA mi$2.40, ph$3.30 60-10597

Trans. of [Ia] Chimica e l'Industria (Italy) 1959, v. 41, no. 4, p. 287-292.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-17206 [1959] 15p.

The principal characteristics are reported of polymers obtained by stereospecific polymerization of monomers derived from styrene by substituting one or more alkyl groups in different positions of the aromatic ring. In general, stereospecific polymerization can be applied to all these monomers, but only some of the resulting polymers crystallize in an evident manner. The crystalline polymers all possess isotactic configurations. They show high melting points and, in several cases, high crystallinity and high crystallization rates. All polymers derived from styrenes monosubstituted in the para position are amorphous, while those derived from dimethyl-substituted styrenes are crystalline even when the para position is substituted. (See also 60-10599)

Snostakovskiy, M. F., Bogdanova, A. V., and Ushakova, T. M.
VINYL COMPOUNDS IN DIENE SYNTHESIS. I. INTERACTION OF SOME SIMPLE VINYL ETHERS WITH CYCLOPENTADIENE AND HEXACHLORO-CYCLOPENTADIENE. [1959] [15]p. 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-20867

Trans. of *[Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya] 1957, no. 10, p. 1245-[1249].

The diene condensation reaction of vinylphenyl, vinylbutyl, and vinylcyclohexyl ether with cyclopentadiene was investigated. This reaction proceeds stepwise and may proceed in the second stage with other dienes. The possibility of obtaining condensation products of simple, vinyl ethers and their adducts with cyclopentadiene and with hexachlorocyclopentadiene is demonstrated. A series of 10 compounds containing four and five five-membered rings in the molecule were isolated and characterized; eight of which are unknown.

Souci, S. W.
CONTRIBUTIONS TO THE CHEMICAL CHARACTERIZATION AND ANALYTICAL INVESTIGATION OF PEAT. [1959] 37p. 44 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-18557

Trans. of Kolloid-Z[eitschrift] (Germany) 1938, v. 82, p. 87-99.

Tager, A. A., Tsilipotkina, M. V., and Suvorova, A. I.
THE EFFECT OF ANNEALING ON MOLECULAR PACKING IN POLYSTYRENE. [1959] 4p. 14 refs. T-2993.
Order from LC or SLA mi$1.80, ph$1.80 60-10277

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 124, no. 1, p. 133-134.

Because previous work by V. A. Kargin and Yu. S. Lipatov (Zhur. Fiz. Khim. 32: 326, 1958) had shown that annealed samples of polymethyl methacrylate absorb less vapor of the methylester of isobutyric acid than quenched samples (and therefore have closer molecular packing than quenched samples), the effect of long annealing on the capacity of polystyrene to absorb methyl-alcohol vapor was studied. Polystyrene preheated to 140°C was slowly cooled to 20°C. One month was required for the cooling. The cooling rate from 140° to 95° was 0.5°/hr: at much lower temperatures the rate was 0.1°/hr. Specific surface, calculated by the BET method, was 14.0 sq m/g for annealed samples of a molecular weight of 110,000, as compared with 30.0 sq m/g for unannealed samples of molecular weight of 133,000. Pore volume, determined by the method of M. M. Dubinin and L. V. Radushkevich (Akad. Nauk SSSR Doklady 55: 331, 1947; and Zhur. Fiz. Khim. 23: 1410, 1949; see also C. Brunauer et al. J. Am. Chem. Soc. 60: 309, 1938) was 0.007 and 0.015 cu cm/g, respectively, for the annealed and unannealed samples. Open packing of high molecular polystyrene is indicated.

Ziegler, Karl, Schneider, Kurt, and Schneider, Josef.
ORGANO METALLIC COMPOUNDS; ALUMINUM TRIALKYLS AND DIALKYL ALUMINUM HYDRIDES AS REDUCING AGENTS. [1959] 15p. 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10132

Trans. of [Justus] Liebigs Ann[alen der] Chem[ie] (West Germany) 1959, v. 623, no. 1/3, p. 9-16.

Physical Chemistry

Behrens, H[ans].
THE STRUCTURE AND COMBUSTION KINETICS OF DIFFUSION FLAMES. 28 Oct 53, 2p. (4 figs. refs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10177

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (East Germany) 1951, v. 197 [no. 1/2] p. 1-5.

Shadow pictures were used to study the combustion zone structure of diffusion flames of gaseous fuels. The ordinary oxygen-premixed flame has a sharp pair of bright and dark streaks in the visible light zone. The diffusion flame of hydrocarbons in air also has a sharply streaked pair but this is displaced from the visible light zone toward the fuel gas. When the fuel-gas is hydrogen, however, there are no bright-dark streaks. The very dark effect also appears when fuel gas simply streams out and is caused by the density difference between the fuel gas and the atmosphere. A normal premixed hydrogen flame scatters light in the combustion zone because of the density change resulting from the high temperature gradient. This result is connected to earlier investigation of the cracking process in the combustion zone of fatty premixed flames. In this predominantly thermal reaction there is a lack of oxygen and so the fuel gas is exposed first to the combustion zone; and when it is a hydrocarbon it is cracked into soot and hydrogen in the superfat layer of the combustion zone. By thermal diffusion these heavy soot particles become concentrated at the beginning of the combustion zone where the temperature gradient begins. They absorb and scatter the light, producing a shadow that has nothing to do with a change in refractive index. Since the light is diffracted, there is a bright zone near the dark zone in

the shadow picture. No soot is formed in a hydrocarbon-free hydrogen flame, and so the diffusion flame shadow picture does not show this effect. Hydrogen and hydrocarbon diffusion flames do not show a light zone, and so there must not be a sharp temperature or density gradient. A part of the hydrocarbon is split into soot and hydrogen by a thermal reaction before oxidation.

Belugina, G. V., Zakiyeva, S. Kh. and others.
THE STABILITY AND VISCOSITY OF CONCENTRATED SUSPENSIONS IN OLEOGELS OF METALLIC SOAPS. 4 Nov 59, 6p. 16 refs. JPRS: L-1047-N.
Order from OTS $0.50 59-13997

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 126, no. 2, p. 318-321.

The aluminum soaps of naphthenic acids used as the structure forming agent had the general formula $Al(OH)_n(RCOO)_m$, where $n + m = 3$. There were prepared by the method of double exchange decomposition. A standard surface-oxidized aluminum metal powder with particle sizes 6 to 13μ was used as the dispersed solid phase. The dispersion medium was a refined basic paraffin-naphthene fraction with an aromatic hydrocarbon content of about 1.5 percent. The first viscosity measurement was made two days after gel preparation to permit complete soap dissolution and gel homogenization. Introduction of a solid phase led to a sharp increase in the initial viscosity, but caused no change in the character of its aging. An increase up to four percent in the soap concentration caused a sharp increase in the initial viscosity of both systems and promoted structure formation in the bulk of the dispersion medium, thus causing the viscosity to drop much less sharply with time (no more than two-fold in one month). When the paraffin-naphthene fraction was replaced by benzene the initial viscosity of the gel was sharply lowered. When a sufficiently concentrated suspension was formed (50 percent by weight of the solid phase, or 25 percent according to the filled-space fraction $\phi = V_1/(V_1 + V_2)$) in any of the gels and at any stage of their aging within the maximum viscosity range covering four decimal orders, the viscosity increased by approximately the same factor (K). This indicates that fully stable aggregations were formed by the concentrated suspensions. (See also 59-12438 (p 1-8), 59-17517)

Berl, E., Herbert, W., and Wahlig, W.
A NEW APPARATUS FOR ELECTROMETRIC MEASUREMENT BY MEANS OF ELECTRON (VACUUM) TUBES. I-II. [1959] 6p. (6 figs omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10108

Trans. of Chemische Technik (Germany) 1930, 5 Nov, p. 445-446 and p. 458-460.

Beutler, H. and Josephy, B.
RESONANCE AT IMPACTS IN FLUORESCENCE AND CHEMILUMINESCENCE. Oct 59. 27p. 51 refs.
Order from SLA mi$2.70, ph$4.80 60-10318

Trans. of Zeitschrift für Physik (Germany) 1929, v. 53, p. 747-765.

Bridelle, R[aymond] and Michel, A[ndré].
THE PHYSICO-CHEMICAL CHARACTER OF IRON CARBONITRIDES, tr. by R. E. P. 23 Sep 54, 2p. 10 refs.
Order from SLA mi$1.80, ph$1.80 60-10187

Trans. of [Académie des Sciences, Paris]. Comptes Rendus (France) 1954, v. 239 [no. 3] p. 274-275.

The carbonitride phases that are derivatives of all the known iron carbides and nitrides except hexagonal carbide Fe_2C were prepared and studied. The ε carbonitrides are derivatives of Fe_3N with the partial substitution of C for N; the C - N/Fe ratio can vary between 1/3 and 1/2. They are prepared by the action of NH_3 on Hagg carbide or cementite at 450° to 500° and are characterized by a hexagonal arrangement of the iron atoms. The parameter "a" can vary from 2.693 to 2.762 A, and "c" from 4.370 to 4.414 A. These phases are ferromagnetic and the Curie point lies between -90° and 388°. They are stable up to 450°, evolve between 450 and 600° by gradually giving off N_2, and decompose above 600° by yielding a carbonitridated γ' phase, and some α iron and some cementite. The γ' carbonitrides are derivatives of Fe_4N with C substituted for N. The [C] +[N]/[Fe] ratio is about 1/4. They are formed at the time of the decomposition of the hexagonal carbonitridated phases and are characterized by a cubic face-centered arrangement of the iron atoms. Their parameter varies between 3.787 and 3.790 A. They are ferromagnetic and their Curie point varies between 470° and 492°. These phases evolve by heating; at 600° α iron is obtained when N_2 is given off and cementite is left. The ζ carbonitrides are derivatives of Fe_2N and have an orthorhombic structure with centered bases: the C - N/Fe ratio is 1/2. They are obtained by CO carburization at 450° of the hexagonal nitridated phases at the limit of insertion (near Fe_2N). The observed parameter limits are: a_1=2.757 A, b_1=4.825 A, c_1=4.405 A and a_2=2.746 A, b_2=4.842 A and c_2=4.370 A. These phases are ferromagnetic at room temperature and their Curie point lies between 288° and 350°. Their thermal evolution leads to Hagg carbide. Carbonitrides that are derivatives of Hagg carbide have the orthorombic structure of this carbide and they are obtained by the carbonitridation at 550° of iron or of one of its oxides. The Curie point (250 - 266°) is lowered by the partial substitution of N for C. These phases only evolve around 650° by giving up cementite that is itself stabilized. The carbonitrides that are derivatives of cementite have the same structure as the pure cementite and are formed by CO carburization of iron nitrides at 550° to 600°. Their Curie point lies between 203° and 227° and is either below or above the zone where pure cementite is found. These phases are much more stable than is pure cementite and they only evolve when heated to 850° to 900°.

Kurokawa, Masatake, Kambayashi, Yoshio, and Shinagawa, Ryoji.
SECONDARY HYDROGENATION OF OIL OBTAINED BY THE LIQUEFACTION OF COAL. [1959] 8p. (23 tables omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10035

Trans. of Kogyo Kagaku Zasshi (Japan) 1944, v. 47, no. 5, p. 455-461.

Results are summarized of experiments which were made to determine the influence of (1) quantity and type of the raw material oils, (2) quantity of hydrogen, and (3) reaction temperature.

Candea, C. and Kühn, J.
THE CONVERSION OF METHANE AND PETROLEUM HYDROCARBONS WITH STEAM. [1959] 6p. (3 tables omitted) 13 refs.
Order from SLA mi$1.80, ph$1.80 60-10250

Trans. of [Scoala Politechnica, Temeszvar]. Bull[etin] Sci[entifique] (Rumania) 1934, v. 5, p. 225-232.

Tests are described which show that in using a Fe-Ni-Mn catalyst applied to iron turnings, the conversion of natural gas, petroleum and petroleum hydrocarbons (Pacura) with steam to carbon monoxide and hydrogen takes place with a satisfactory yield. The natural gas (96.4% methane) under the best conversion conditions 1000° and about 20-sec contact, at a ratio of 1:3 with steam, yields a final gas containing about 20% CO and 70% H_2. In the conversion of petroleum with steam we obtained a final gas containing about 30% H_2 and 70% CO: in this case also with a sufficient duration of contact, complete conversion takes place. The values obtained for CO and H_2, as a function of the temperature, are shown in the graph. The petroleum distillation residues (Pacura) may be converted with steam under the same conditions as methane and petroleum. At temperatures between 800 and 900° it is possible to use the latter for obtaining a good illuminating gas. The gas obtained from Pacura and steam may be used to advantage for operating gas engines. (Author)

Cassignol, C[harles] and Ranc, G[aston].
ON THE NON-LINEARITY AS A FUNCTION OF THE INTENSITY OF HIGH ENERGY CATHODE SPUTTERING AND ITS VARIATION AS A FUNCTION OF THE TEMPERATURE. Aug 59 [5]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10125

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1959, v. 248, no. 13, p. 1988-1990.

A new theory of high energy cathode sputtering could be developed as a result of the observation of a deviation from linearity of this phenomenon in regard to the intensity of the incident ionic currents. This theory makes it possible to anticipate an influence of the temperature of the target on the rate of cathode sputtering. This influence is studied and demonstrated. (Author)

Chizhikov, D. M., Frents, G. S., and Tratsevitskaya, B. Ya.
MECHANISM OF THE OXIDATION OF CADMIUM SULFIDE. [1959] 13p. 5 refs.
Order from MDF $6.50 MDF C-116

Trans. of A[kademiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izvestiya, 1950, no. 12, p. 1815-1826.

The process can be represented by a number of reactions proceeding successively in parallel. The primary oxidation product is the middle cadmium sulfate, which is formed by the addition of oxygen to the sulfide according to the reaction $CdS + 2O_2 = CdSO_4$. An increase in the oxygen partial pressure and a temperature rise intensify the reaction in which the primary sulfate is formed. The cadmium sulfate which has been formed reacts with the residual sulfide according to the equation $CdSO_4 + CdS = 2Cd + 2SO_2$. The rate of this reaction depends on the temperature and the relation between the reacting substances. The temperature of an intense reaction is 800°. According to computed results, the partial pressure of the sulfide gas at this temperature should not exceed 35 mm Hg. In the presence of free oxygen in the gas phase, the metallic cadmium being evolved is oxidized to the oxide according to the equation $Cd + \frac{1}{2} O_2 = CdO$. The oxygen partial pressure adequate to the progress of the reaction at 800° is 2.12×10^{-12} mm Hg. Hence, even for an insignificant oxygen concentration in the gases, the metallic cadmium (a phase easily volatile under the conditions of the temperature of the annealing process) can be transformed into the oxide without being sublimed, in practice, prior to 1000°. The formation of metallic cadmium can also occur during the interaction of cadmium sulfide and oxide thus $CdS + 2CdO = 3Cd + SO_2$. The most noticeable progress of this reaction is at 800°. The cadmium oxide which had been formed can unite with the sulfate with a basic sulfate of variable composition being formed. It can be assumed that the interaction of the basic cadmium sulfate and the sulfide proceeds at a higher temperature than the interaction of the middle sulfate and the cadmium sulfide. At elevated temperatures, direct thermal dissociation of the sulfate can also occur.

Dévoré, Pierre, Eyraud, Charles, and Prettre, Marcel.
CATALYSIS; INFLUENCE OF THE EXPERIMENTAL CONDITIONS ON THE HOMOGENEOUS PART OF THE HETERO-HOMOGENEOUS OXIDATION OF METHANE IN THE PRESENCE OF INCANDESCENT PLATINUM. [1959] [6]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10124

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1959, v. 248 [no. 16] p. 2345-2347.

Previous investigations (Compt. rend. 246: 1200, 1958) were extended to more moderate temperatures by substituting a thermoelectric couple for the optical micropyrometer used above 1100°C. The results concern the case of reaction systems formed by methane, oxygen, and nitrogen, always including an excess of fuel. The role of each parameter was defined by comparison with the behaviour of a reference system formed by a mixture of 3% methane and 97% air introduced at the rate of flow of 10 liters/hour over a ribbon of spectroscopically pure platinum with dimensions 10 x 2 x 0.02 mm. For this mixture the combustion stops being purely heterogeneous around 1100°C but up to about 1350 the homogeneous part only increases very slowly until it reaches 8% of the total combustion which in its turn uses 42 to 48% of the methane which is introduced. Then the importance of the homogeneous reaction increases much more rapidly. At 1560° it represents 57% of the evolution. It stops growing almost completely above 1600°. At this

temperature the homogeneous reaction and interface processes consume 78% of the methane. This relatively low amount of oxidation is due to the conditions imposed on the catalytic chamber by the constraint of the calorimetric method. The effect of a decrease of the hourly rate from 10 to 4 liters of the same mixture with 3% methane is the appearance, starting at 1200° of a relatively important homogeneous reaction representing 28% of the total reaction which is itself stronger by about 50%. A decrease from 3 to 1.5% of the concentration of methane has no influence on the homogeneous part of the reaction up to 1530°. The decrease in the quantity of oxygen (decrease of the rate or dilution by nitrogen) favors the homogeneous part of the reaction by allowing it to become important at lower temperatures. This effect is, however, only observed below 1500 to 1600°.

Escourrou, René.
SELECTIVE HYDROGENATION OF COCONUT OIL (COPRA) AND OF THE FATTY ACIDS FROM COPRA. II, tr. by P. M. McCann. [1959] [11]p. 16 refs.
Order from SLA mi$2.40, ph$3.30 60-10366

Trans. of Soc[iete] Chimique de France. Bull[etin] 1939, 5 ser. v. 6, p. 191-200.

We carried out the hydrogenation of coconut oil, under reduced pressure, and by following the progress of the operation carefully by determining the iodine numbers, we showed the degree of selectivity of the hydrogen fixation. In the beginning the absorption is rapid even in a vacuum, but it diminishes very quickly when the most avid unsaturated portions are saturated. We operated under the same conditions, but at ordinary pressure, in order to demonstrate the influence of reduced pressure, and we proceeded in the same way with the fatty acids of copra oil. The use of our method with reduced pressure permits the stepwise hydrogenation of the oils and fats which are known to be of importance and of practical interest, and in the conclusions will be mentioned the value of several methods of application which we were induced to study as the result of our researches. (Author).

Freundlich, W[illiam] and Bichara, Michel.
THE REDUCTION OF TiO_2 WITH CaH_2. [1959] 3p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10179

Trans. of [Academie des Sciences, Paris] Comptes Rendus (France) 1954, v. 238, no. 12, p. 1324-1325.

Very pure Ti was prepared by reducing TiO_2 with CaH_2. The mixture was kept at 900° for 5 minutes, cooled very rapidly in a vacuum, and washed in acetic acid. The very fine powder obtained contained 99.5% Ti. A better product (99.7% Ti) was obtained by prolonged degassing at 1600° followed by very rapid cooling. Measurement of the parameters of these hexagonal compact crystals confirmed the great purity of the final product: a-2.940A, c- 680A, c/a- 1.591. The following reaction probably takes place: $2CaH_2 + TiO_2 \rightarrow 2CaO + Ti + 2H_2$.

Fuks, N. A.
THE MECHANICS OF AEROSOLS, tr. by E. Lachowicz. 1958 [457]p. 581 refs. CWL Special Pub. 4-12.
Order from OTS $7.50 59-21069

Trans. of [Mekhanika Aerozoley] Moscow, 1955.

Contents:
Classification of aerosols. Dimensions and shape of particles in aerosols
Rectilinear, uniform motion of aerosol particles
Rectilinear irregular motion of aerosol particles
Curvilinear motion of aerosol particles
Brownian movement and diffusion in aerosols
Convective and turbulent diffusion in aerosols
Coagulation of aerosols
Transformation of powdery substances into the aerosol stage

Glazov, V. M. and Vertman, A. A.
ON THE BEHAVIOR OF ALUMINUM, GALLIUM AND INDIUM ANTIMONIDES IN THE LIQUID STATE. [1959] 4p. 7 refs.
Order from MDF $2.00 MDF G-164

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1958, v. 123, no. 3, p. 492-494.

The temperature dependence of the magnetic susceptibility was determined for aluminum, gallium and indium antimonides in the liquid state and the results were compared with certain of their thermodynamic and kinetic properties. At the melting point the melts of the compounds have approximately the same short-range order structure as in the solid state. The coordination number increases as the temperature rises (the growth in the magnetic susceptibility of the melts of the compounds corresponds to this) and approaches dense packing at a certain temperature. The temperature at which relatively dense packing is achieved in a fluid corresponds to the first maximum on the curves of the temperature dependence of the magnetic susceptibility and the minimum on the curves of the temperature dependence of the free activation energy of the viscous flow. Upon further heating to a definite limit, no changes occur in the melts of the AlSb, GaSb and InSb compounds except those which accompany the heating of any fluid (weakening of the molecular interaction forces, increase in the intramolecular spacings, increase in the number of vacancies, etc.). The chemical compound is relatively stable in this temperature range in the liquid state. This is also indicated by the presence of singular extremums (minimum electrical conductivity and maximum vixcosity) on the composition-property isotherms corresponding to this temperature range. The properties change monotonically on this section: The magnetic susceptibility and the viscosity vary smoothly, the free activation energy of the viscous flow increases linearly. On reaching a specific temperature, which is determined by the individual properties of the compounds, the latter start to dissociate strongly (a minimum on the curves of the temperature dependences of the magnetic susceptibility and the deviations from the regular behavior on the curves of the temperature dependence of their viscosity correspond to these temperatures). The degree of dissociation rises upon further heating and in this connection the magnetic susceptibility increases. The

temperature factor seems to prevail upon the achievement of some specific, significant degrees of dissociation and, consequently, the magnetic susceptibility again starts to drop. (See also 59-19013)

Graf, Roderich.
THE REACTION OF ALKANES WITH PHOSPHORUS TRICHLORIDE AND OXYGEN, tr. by P. M. M. 23 Jan 57, 5p. 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10371

Partial trans. (p. 9-12) of Chemische Berichte (West Germany) 1952, v. 85 [no. 1] p. 9-19.

It was found that by causing oxygen to act on mixtures of saturated aliphatic hydrocarbons and phosphorus trichloride, there is obtained in addition to hydrogen chloride and phosphorus oxychloride, as a direct substitution reaction, alkane phosphonic acid dichloride of the constitution: alkyl-$POCl_2$. With ethane, the dichloride of phosphoric acid monoethyl ester is obtained in addition to ethane phosphonic acid dichloride. The strongly exothermic, generally useful reaction proceeds in the dark and even at -80°C. has a considerably high conversion rate. The progress of reaction is explained and the possibilities of conversion of the newly disclosed group of substances are pointed out. (Author)

Krichmar, S. L.
ON THE POLARIZATION MECHANISM OF THE SUPPRESSION OF STRUCTURAL ETCHING IN ELECTROCHEMICAL POLISHING. [1959] 6p. 12 refs.
Order from MDF $3.00 MDF K-194

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 124, no. 3, p. 621-624.

Kubelka, Paul and Wenzel, Wilhelm.
EQUILIBRIUM RELATIONS INVOLVED IN THE INTERACTION OF STEAM AND METHANE. II-IV (CONTINUATION). [1959] [9]p. (6 figs. [parts of tables] omitted).
Order from SLA mi$1.80, ph$1.80 59-20677

Trans. of [Chemisch-Metallurgische Zeitschrift] die Metallbörse (Germany) 1931, v. 21 [no. 54] p. 1275-1276; [no. 58] p. 1372-1373; [no. 60] p. 1421-1422.

See also 59-20678

Kurtz, P.
INVESTIGATION OF THE FORMATION OF NITRILES. VII. ALLYL CYANIDE. [1959] 8p.
Order from SLA mi$1.80, ph$1.80 60-10136

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1951] v. 572 [no. 1] p. 69-74.

Levy, S.
STUDY OF ANOMALOUS DISPERSION OF EXCITED GASES. PT. VII. ANOMALOUS DISPERSION OF ELECTRICALLY EXCITED HELIUM. Oct 59, 13p. 10 refs.
Order from SLA mi$2.40, ph$3.30 60-10316

Trans. of Zeitschrift für Physik (Germany) 1931, v. 72, p. 578-586.

Anomalous dispersion on various lines of the positive column of helium in connection with current density and pressure is studied according to the hook method of Roschdestwensky. From the measurements various relative values of transition probabilities of helium lines are calculated; the course of current-dependence of anomalous dispersion leads to the conclusion that high states of excitation (2^1P, 2^3P etc.) are not produced directly from a normal state, but via the metastable 2^1S- and 2^3S- states by electron impact; the characteristic influence of pressure on the excitation of various singlet and triplet states of He and Ne is discussed. (Author)

Mailhe, Alphonse and Codon, F. de.
NEW METHOD OF SYNTHESIZING NITRILES BY CATALYSIS. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10361

Trans. of Academie des Sciences [Paris] Comptes Rendus (France) 1918, v. 166, p. 215-217.

In the presence of a dehydrating catalyst, such as thoria for example, ammonia will react, at a suitable temperature upon aldehydic oxygen and give rise to an imine, which will be unstable at this temperature and will lead by loss of hydrogen to a nitrile, following these reactions:

$$RC\begin{matrix}\diagup O \\ \diagdown H\end{matrix} + NH_3 \longrightarrow RCH=NH$$

$$RCH=NH \longrightarrow RCN + H_2$$

Mailhe, Alph[onse] and Codon, F. de.
ORGANIC CHEMISTRY; CONVERSION OF SECONDARY AND TERTIARY ALIPHATIC AMINES TO NITRILE. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10364

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1917, v. 165, p. 557-559.

See also 60-10362

Mailhe, Alphonse.
PREPARATION OF ALIPHATIC NITRILES BY CATALYSIS. [1959] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10362

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1918, v. 166, p. 121-123.

See also 60-10363

Mailhe, Alphonse.
PREPARATION OF AROMATIC NITRILES BY CATALYSIS. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10363

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1918, v. 166, p. 36-38.

See also 60-10364

Podrouzek, V.
PRACTICAL APPLICATION OF A THEORY OF EMULSIONS TO CHEMICAL INDUSTRY. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10291

Trans. of Chimie et Industrie (France) 1930, Mar. [special no.] p. 293-294.

Pouradier, Jacques.
THE SOLUBILITY OF GELATIN IN COLD WATER. 20 Dec 50, 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10378

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1950, v. 230 [no. 16] p. 1466-1467.

See also 60-10328, 60-10386

Pouradier, J. and Venet, A. M.
THE STRUCTURE OF GELATIN. I. STATE OF DISPERSION OF GELATIN IN SOLUTION, MOLECULAR WEIGHT, VISCOSITY AND FRACTIONATION, tr. by P. M. M. 1 Mar 54, 18p. 46 refs.
Order from SLA mi$2.40, ph$3.30 60-10386

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1950, v. 47 [no. 1/2] p. 11-20.

A comparison of the results of measurements of aqueous gelatin solutions above the fusion temperature of gel seems to prove that under these conditions, at least in dilute solution, gelatin is dispersed molecularly. We show, on the other hand, that osmotic pressure methods of molecular weight determination may be applied to gelatin and that the molecular weights thus measured are characteristic of the gelatins studied and do not depend on the solvent (distilled water, buffer solution at a pH equal to or near the isoelectric point of gelatin, cold urea solution, sodium sulfate solution, metacresol). On the other hand, the study of the variations of viscosity of a dilute gelatin solution according to concentration, permits a determination of the intrinsic viscosity of gelatin. This intrinsic viscosity which is a characteristic property of the gelatin solvent system permits us to determine the form of the molecule of gelatin in solution. Finally, we describe a method of fractionating gelatin. We succeeded in extracting from a commercial gelatin relatively homogeneous fractions whose molecular weights varied between 15,000 and 250,000. (Author) (See also 60-10328, 60-10378, 60-10384)

Pouradier, J. and Venet, A. M.
THE STRUCTURE OF GELATINS. IV. COMPARISON OF GELATINS FROM DIFFERENT ORIGINS, tr. by P. M. M. 27 Apr 53 [24]p. [1 table, 1 equation, and 14 lines omitted] 11 refs.
Order from SLA mi$2.70, ph$4.80 60-10385

Trans. in manuscript of J[ournal de] Chim[ie] Phys[ique] (France) 1952, v. 49 [no. 3] p. 85-92.

A hide gelatin (Eastman Kodak F 74), a bone gelatin, and a pork-hide gelatin, with isoelectric points of 4.75, 4.8, and 8.8 respectively, were fractionated by coacervation. The law of variation of the intrinsic viscosity and the fusion temperature of the gels and of the alcohol index as a function of molecular weight were determined for these three gelatins. In each case there was a simple relation between the variables, but these relations varied between gelatins. Determinations made on several unfractionated commercial gelatins were very erratic and had no direct relations to the average molecular weights. The results show that gelatins of various origins usually have different structures even if they have very similar isoelectric points. (See also 60-10028, 60-10386)

Pouradier, J. and Venet, A. M.
THE STRUCTURE OF GELATINS. V. DEGRADATION OF GELATIN IN ISOELECTRIC SOLUTION, tr. by P. M. M. 4 May 53, 23p. (5 figs. refs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10384

Trans. in manuscript J[ournal de] Chim[ie] Phys[ique] (France) 1952, v. 49 [no. 4] p. 239-244.

The molecular weight of degraded hide gelatin (Eastman Kodak F74) was measured by osmotic pressure after having diluted the solution by a buffer solution of acetic acid-sodium acetate of pH 4.75 ± 0.05. In some cases the intrinsic viscosity of the degraded gelatin was also determined. Results showed that the degradation of gelatin, which is the result of breaking the peptide linkages, is not a monomolecular reaction. Several hypotheses are offered to explain the results. (See also 60-10385)

Pouradier, J., Roman, J. and others.
TANNING OF GELATIN BY CHROMIUM ALUM. I. THE EFFECT OF CHROMIUM ALUM ON PHYSICAL AND MECHANICAL PROPERTIES, tr. by P. M. M. 21 May 53 [37]p. (16 figs. refs. omitted).
Order from SLA mi$3.00, ph$6.30 60-10328

Trans. in manuscript of Soc[iété] Chim[ique de] France. Bull[etin] 1952 [5 ser. v. 19, no. 11/12] p. 928-937.

(See also 60-10384)

Raschevsky, N. von.
EQUILIBRIUMS IN SYSTEMS, CONTAINING LAMINARLY DISTRIBUTED PHASES IN CONNECTION WITH THE QUESTION OF SPONTANEOUS SURFACE INCREASE OF MICROSCOPIC STRUCTURES (Uber

Gleichgewichte in Systemen, Welche Flächenhaft Verteilte Phasen Enthalten, im Zusammenhang mit der Frage nach der Spontanen Oberflächenvergrösserung von Mikroskopischen Gebilden). [1959] [28]p. (foreign text included) 20 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3730

Trans. of Zeit[schrift] für Physik (Germany) 1928, v. 51, p. 571-583.

The monomolecular layers which occasionally form at the surface of solutions are treated as independent phases. The equilibrium is investigated in a closed system consisting of a spatially expanded phase and a two-dimensional plane phase with the assumption that the two phases are in a chemical interaction. The result is found that generally with a given volume of the system the total free energy (F) depends on the surface area of the surface, so that a certain surface area exists under certain circumstances which corresponds to the minimum of F, i.e., to the stable equilibrium. For this value of surface area the capillary pressure disappears, and therefore a free liquid system also can assume a non-spherical structure. Changes of the system are investigated which occur with gradual changes of the total masses of the components contained in the system. It is shown that on occasion spontaneous increases of the surface can occur as a consequence of the above-mentioned results, which increases are expressed either in an expansion or in a separation of the system. (Author)

Rostovtsev, S. T. and Yem, A. P.
SOME KINETIC CHARACTERISTICS OF THE REDUCTION OF IRON OXIDES BY HYDROGEN [Nekotoryye Kineticheskiye Zakonomernosti Vosstanovleniya Okislov Zheleza Vodorodom v Sloye]. [1959] 2300 words.
Order from HB $4.85 HB-4683

Trans. of Nauchn[nyye] Dokl[ady] Vyssh[ey] Skholy. Metall[urgiya] (USSR) 1959, no. 2, p. 9-14.

Study of reduction of iron oxides by gases, specifically hydrogen, on basis of two simple models: (a) reduction of an ore sample enveloped by a stream of reducing gas; and (b) reduction of an ore bed or column by reducing gas passing through it. Three successive stages of model a; kinetic equations. Equations covering model b. Experimental procedure and results. Degree of reduction of ferric oxide over depth of bed at different temperatures; degree of reduction of separate portions of bed in a stream of hydrogen at 400°C and 800°C. Effect of hydrogen flowrate on nature of process; data on dependence of hydrogen consumption for removal of 1% oxygen upon flowrate. (HB abstract)

Rybnikar, F.
MEASURING THE TRANSITION TEMPERATURES OF POLYMERS BY MEANS OF THE PENETROMETRIC METHOD, tr. by A. Bergstein. [1959] 8p. (7 figs. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10133

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, no. 5/6, p. 1200-1205 (Previously pub. in Chem[icke] Listy (Czechoslovakia) 1958, v. 52, p. 896ff).

Sakharov, G. D.
METHOD FOR MEASURING STATIONARY SURFACE CONCENTRATIONS OF COMPONENTS OF A CATALYTIC REACTION. 20 Aug 59 [5]p.
Order from LC or SLA mi$1.80, ph$1.80 60-10388

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 126 [no. 4] p. 821-822.

A method is proposed for the determination of the amount of reaction components adsorbed on a catalyst (under stationary reaction conditions). The method is based upon investigation of the time necessary for the appearance of these substances at the reactor outlet.

Scheiber, Johannes.
THE GELLING OF FATTY OILS. [1959] 16p. 89 refs.
Order from SLA mi$2.40, ph$3.30 60-10379

Trans. of Kolloid-Zeitschrift (Germany) 1928, v. 46 [no. 4] p. 337-345.

Terminasov, Yu. S. and Beletskiy, M. S.
X-RAY INVESTIGATION OF THE STRUCTURE OF A NICKEL SKELETON CATALYST. [1959] 4p. 6 refs.
Order from MDF $2.00 MDF T-136

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1948, v. 63, no. 4, p. 411-413.

The nickel residue which is formed after aluminum is leached from the Ni_2Al_3 compound by a solution of sodium hydroxide, i.e., the nickel skelton catalyst, is shown to be disperse crystals of nickel of a hexagonal modification in whose crystal lattice hydrogen is dissolved.

Tertian, Robert and Papée, Denis.
AN X-RAY STUDY OF THE PRODUCTS RESULTING FROM THE CAREFUL DEHYDRATION OF HYDRARGILLITE AND BAYERITE, tr. by R. E. P. 8 Dec 53 [3]p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10171

Trans. of [Académie des Sciences, Paris]. Comptes Rendus (France) 1953, v. 236, no. 16, p. 1565-1567.

It is suggested that the solid resulting from the careful dehydration of hydrargillite or of bayerite does not generally form a unique phase but rather two phases, one of boehmite (for example 25%) and the other a much more important fraction of poorly developed alumina that, in the case of hydrargillite, can hardly be discerned in ordinary diffraction pictures. In certain cases one can obtain a single phase but it is the extremely rehydratable alumina phase with very poorly developed structure. (See also 59-17445, 60-10180)

Urazov, G. G., Kefeli, L. M. and Lel'chuk, S. L.
INVESTIGATION OF THE STRUCTURE OF A NICKEL SKELETON CATALYST. [1959] 4p. 4 refs.
Order from MDF $2.00 MDF U-102

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1947, v. 55, no. 8, p. 745-748.

An X-ray analysis showed that as aluminum atoms are removed from the lattice, the remaining nickel atoms regroup into a face-centered nickel lattice. During the oxidation reaction on the surface of the nickel catalyst, the catalyst does not oxidize but combustion of the adsorbed hydrogen occurs. The magnitude of the nickel particles, obtained as a result of leaching Ni_2Al_3 is 10^{-6} to 10^{-7} cm.

Urazovskiy, S. S. and Chetayev, P. M.
PARTICULARITIES OF THE TEMPERATURE DEPENDENCE OF THE REFRACTIVE INDEX IN LIQUIDS, tr. by G. G. S. 10 Feb 50, 3p. (1 fig. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 60-10333

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 67 [no. 2]p. 313-315.

Weiss, Alarich and Weiss, Armin.
SILICON CHALCOGENIDES. VI. THE FIBROUS SiO_2 MODIFICATION, tr. by R. E. P. 11 Aug 54, 15p. (7 figs. 5 tables omitted).
Order from SLA mi$2.40, ph$3.30 60-10188

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1954, v. 276, no. 1/2, p. 95-112.

At 1200° to 1400° C a new SiO_2 modification is obtained according to the reaction scheme: $2\,SiO + O_2 \rightarrow 2\,SiO_2$, and $2\,SiO \rightarrow SiO_2 + Si$. This modification has long thin fibers and it crystallizes orthorhombically with $a = 4.72$ A, $b = 5.16$ A, $c = 8.36$ A in the space group D_{2h}^{26} -I cmα. The Si atoms occupy the point position 4(a), the O atoms occupy the point position 8(j) with $x = 0.209 \pm 0.005$ and $z = 0.110 \pm 0.005$. The structure is isotypic with that of SiS_2 and $SiSe_2$. In the presence of traces of water vapor this fibrous SiO_2 forms amorphous silicic acid. In the presence of water it forms m-silicic acid $(H_2SiO_3)_n$ which is identified by NaOH titration. This m-silicic acid reacts with Ag^+ to form orange-gold silver m-silicate. At room temperature it rapidly condenses as amorphous, spatially intertwined preparations of silicic acid. The density of this modification is 1.96 to 1.98; its melting point is about 1420° C. After longer heating at 1390° C it forms cristobalite. Tridymite is formed by heating it for several days at 200 to 800° C. During all of these changes it remains fibrous. There appears to be a genetic relationship between the fibrous SiO_2 modification and the fibrous cristobalite chalcedon.

EARTH SCIENCES

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOFIZICHESKAYA, 1959, NO. 6, P. 801-936 (News of the Academy of Sciences of the USSR. Geophysics Series). [1959] 1v. SOV-49-59-6-(1-21)/21.
Order from OTS $0.80, $4.50/6 mo. PB 141 042T-14
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOGRAFICHESKAYA, 1959, NO. 4, P. 3-160 (News of the Academy of Sciences of the USSR. Geography Series). [1959] 1v. SOV-10-59-4-4-(1-29)/29.
Order from OTS $0.60, $3.50/year PB 141 004T-10
Foreign $0.85, $5.00/year

Consists of abstracts in English.

Climatology and Meteorology

Kats, Abram L'vovich.
WEATHER FORECASTING FOR THREE TO SEVEN DAYS. 24 Sep 59, 125p, 65 refs, JPRS: 1911-N.
Order from OTS $2.75 59-13900

Trans. of mono. Predskazaniye Pogody na Tri-Sem' Dney, Leningrad, 1958.

The document translated here is a revised and enlarged edition of the 1950 pamphlet, Weather forecasting a short time in advance (in Russian). Basic methods of 3- to 7-day forecasting developed by the Hydrometeorological Service of the USSR are explained. Chapter headings are entitled (1) Basic principles of study and representation of macroprocesses, (2) Basic principles for analyzing synoptic processes of the same type, (3) Forecast of atmospheric circulation for 3 days, (4) Forecasting the upper air and surface pressure field for 4 or 5 days, (5) Forecasting the upper-level and surface pressure field for 5 to 7 days, (6) Forecasting of some special weather phenomena, and (7) Examples of analysis and 3- to 7-day forecast of macroprocesses.

Rau, Walter
THE ICE-NUCLEUS CONCENTRATION OF VARIOUS AIR MASSES (Die Gefrierkerngehalte der Verschiedenen Luftmassen) tr. by James Gough, Jr. and Valda Dreimanis. June 55, 27p. 7 refs.
Order from LC or SLA mi$2.70, ph$4.80 60-13213

Trans. of Meteorologische Rundschau (Germany) 1954, v. 7, no. 12, p. 205-211.

The ice-nucleus concentration in supercooled (-18° to -43°C) man-made clouds was determined daily for 14 months, according to a method previously developed (Meteorologische Rundschau 7: 59, 1954). The number of nuclei active at certain supercooling temperatures fluctuated by several powers of ten. These variations were not related either to local influences or to individual meteorological elements, but were caused by the change of air masses. Polar air contained many early reacting nuclei that were absent in subtropical (maritime) air. This difference accounts for the annual variation of the mean ice-nucleus concentration, which runs in an antiparallel sense to the annual temperature variation. The results indicate that these ice nuclei have neither an anthropogenic nor a continental origin, but must be mixed nuclei from a maritime source.

Geodesy

GEODEZIYA I KARTOGRAFIYA (USSR) 1959
(Geodesy and Cartography). [1959]
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 7, p. 3-80, PB 141 001T-19
No. 8, p. 3-80, PB 141 001T-18

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHENYKH ZAVEDENIY. GEODEZIYA I AEROFOTOS"YEMKA (USSR) 1959,
(News of Institutes of Higher Learning, Geodesy and Aerial Photography). [1959]
Order from OTS $0.70, $4.00/year
Foreign $0.95, $5.50/year

No. 3, p. 3-157, PB 141 007T-9
No. 4, p. 3-142, PB 141 007T-10

Consists of abstracts in English.

Geology

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOLOGICHESKAYA, 1959 [V. 24] NO. 9, P. 3-119 (News of the Academy of Sciences of the USSR. Geology Series). [1959] 1v. SOV-11-59-9-(1-18)[18.
Order from OTS $0.50, $3.00/6 mo. PB 141 005T-19
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Martinson, G. G.
THE FAUNA OF INTERBEDDED MARINE AND CONTINENTAL MESOZOIC DEPOSITS IN ASIA (O Faune Pereslaivayushchikhsya Morskikh i Kontinental'nykh Mezozoyskikh Otlozheniy v Azii). Oct 59 [10]p. 5 refs.
RTS no. 1121.
Order from LC or SLA mi$1.80, ph$1.80 59-22591

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 2, p. 343-345.

Moum, J. and Rosenqvist, I. Th.
GROUND TEMPERATURES IN EASTERN NORWAY. [1959] 5p.
Order from ATS $8.05 ATS-17L33N

Trans. from Norsk Geologisk Tidsskrift, 1957, v. 37, no. 2, p. 1-7 (Norges Geotekniske Institutt, publication no. 23, p. 1-7).

Zerchaninov, I. K.
GASES DISSOLVED IN DEVONIAN AND CARBONIFEROUS INTERSTITAL WATERS IN THE SARATOV-STALINGRAD VOLGA REGION (O Gazakh, Rastvorennykh v Plastovikh Vodakh Devona i Karbona Saratovsko-Stalingradskogo Povolsh'ya) [1959] [16]p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-19322

Trans. of Gazovaya Promyshlennost' (USSR) 1959 [v. 4] no. 7, p. 1-5.

ENGINEERING

DIGEST OF SOVIET TECHNOLOGY, 1959 [VOL. 1] NO. 7. Oct 59, 56p.
Order from EIS $18.00/year Surface mail
$22.00/year Airmail

Consists of translations on recent technological developments in the USSR and East European countries selected from periodical and non-periodical literature from these countries.

GIDROTEKHNICHESKOYE STROITEL'STVO (USSR) 1959 [VOL. 28] (Hydraulic Engineering Construction). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 8, p. 1-65, PB 141 091T-20
No. 9, p. 1-64 PB 141 091T-18

Consists of abstracts in English.

Dokumin, A. V. and Onika, D. G.
HYDRAULIC UNDERGROUND MINING (Gidromekhanizatsiya pri Podzemnoy Razrabotke). [1959] [13]p.
Order from LC or SLA mi$2.40, ph$3.30 .59-22334

Trans. of mono. Ugol'naya Promyshlennost' Pol'skoy Narodnoy Republiki Moscow, 1957, p. 430-442.

Several hydraulic methods and arrangements used for breaking and conveying coal are summarized.

Aeronautical Engineering

APPARATUS FOR INCREASING THE EFFICIENCY OF CENTRIFUGAL COMPRESSORS BY CONTROL OF THE BOUNDARY LAYER, tr. by F. H. B. 31 Aug 59, 12p. (6 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-19217

Trans. of French patent 963,540, gr. 5, cl. 5, pat. 4 Jan 50, appl. 26 Feb 48, pub. 12 July 50, by Société Nationale d'Étude et de Construction de Moteurs d'Aviation.

Improvement in centrifugal compressors is proposed with the aim of reducing efficiency losses. The improvement consists in providing openings or slots for aspirating or blowing the boundary layer of the fluid in motion in the zones of the wall where this layer tends to become too dense or detached from the walls, creating a turbulence.

FLUG-WELT: SELECTED ARTICLES. [1958] [25]p. F-TS-10041/V.
Order from LC or SLA mi$2.70, ph$4.80 59-12386

Trans. of Flug-welt (West Germany) 1956, v. 8, no. 8, p. 487-490; 497; 516; 519-521.

Contents:
Rebuilding of the German aircraft industry, by Dr. L. S. Rothe
German 15,000-ton press for Canadian aircraft plant, by Arno Fischer
Messerschmitt Me-200 in Germany
37th anniversary celebration of the Red Air Force in Moscow-Tushino, by our Moscow correspondent

Konovalov, N.
HIGH ALTITUDE AND HIGH VELOCITY ENGINES: AIRCRAFT POWER PLANTS, tr. by S. Soudakoff. [1959] 3p. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-10130

Trans. from [Sovetskaya Aviatsiya] (USSR) 1959, 9 Sep.

The general features of ramjet engines are discussed.

Salez, Jacques.
FLIGHT TESTS WITH THE POINCARE-FARMAN TORQUE METER, tr. by L. J. Baker. [1959] 18p. R. T. P. Trans. no. 2410.
Order from SLA mi$2.40, ph$3.30 59-17726

Trans. from Services Techniques [et Industriels de l'Aeronautique]. Bulletin (France) 1938, no. 82.

Results are presented which were obtained with the Poincare-Farman Torque meter during a series of tests on a Potez 541 aircraft fitted with two Gnome-Rhone 14 K drs. engines.

Silber, R. and Oudart, A.
TORQUE METER FOR POWER-DRIVEN AIRCRAFT MODELS IN THE WIND TUNNEL. [1959] 10p. 3 refs. R. T. P. Trans. no. 2386.
Order from SLA mi$1.80, ph$1.80 59-17673

Trans. from Services Techniques [et Industriels de l'Aeronautique] Bulletin (France) [1939] no. 84.

Chemical Engineering

KHIMICHESKAYA PROMYSHLENNOST' (USSR) 1959, NO. 4, P. 1-91 (Chemical Industry). [1959] 1v. SOV-64-59-4-(1-27)/27.
Order from OTS $0.60, $2.25/6 mo. PB 141 059T-13
Foreign $0.85, $3.25/6 mo.

Consists of abstracts in English.

KISLOROD (USSR) 1959 [V. 12] NO. 3, P. 1-55 (Oxygen). [1959] [23]p. [SOV]-67-59-3-(1-27)/27.
Order from OTS $0.60, $3.50/year PB 141 062T-10
Foreign $0.85, $5.00/year

Consists of abstracts in English.

PROCESS FOR MANUFACTURING COMPLEX HYDRIDES, PARTICULARLY LITHIUM ALUMINUM HYDRIDE. [17 Oct 59] 5p.
Order from RIS $5.00 RIS rept. 96109

Trans. of German patent application R 9564 (12i, 1/01), by Riedel-de-haen A. G., Seelze, filed 26 July 52, pub. 22 Apr 54.

A process is described for manufacturing complex hydride, particularly lithium aluminum hydride, by reaction of possibly pulverized alkali or alkaline earth hydrides with halides of metals of Group III or IV of the periodic system of elements in low-boiling anhydrous organic solvents such as ethyl ether and in an inert atmosphere, e.g., nitrogen. The process is characterized in that during or possibly immediately before the batchwise or continuous reaction the alkali

or alkaline earth hydrides are ground inside the reaction vessel. The reaction material is ground once again or vigorously mixed in the presence of abrasives after the principal reaction.

PROCESS FOR PRODUCING BOROHYDRIDES BY REACTION OF METABORATES WITH CALCIUM HYDRIDE. 12 June 59, 14p. 2 refs.
Order from RIS $29.00 RIS rept. 97020

Trans. of German patent application F 22 016 (12i, 1/01) DAS 1 036 222, by Farbenfabriken Bayer, A. G., Leverkusen, filed 24 Dec 56, pub. 14 Aug 58.

A process is described for producing borohydrides by reaction of boron compounds with metal hydrides. The process is characterized in that a hydride of the metals Al, Mg, Ca, Sr, Ba, Li, Na, K, (Rb, Cs) is reacted with a metaborate, or a metal oxide-boron oxide mixture of comparable composition, of a metal of the above series which in the order shown does not stand further to the left than the hydride metal, at temperatures above 100°C and below the melting point of the mixture, forming the borohydride of the metaborate metal and the oxide of the hydride metal. The metal hydride is prepared during the reaction by previously known methods. A solid acid anhydride is added to the reaction mixture. Calcium hydride is used to obtain alkali and alkaline earth borohydrides.

Karaulova, Ye. N. and Gal'pern, G. D.
OXIDIZING METHOD OF LIBERATING SULFIDES FROM MIDDLE FRACTIONS OF PETROLEUM. [1959] 4p. 5 refs.
Order from MDF $2.00 MDF K-197

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 124, no. 3, p. 583-585.
Another translation is available from ATS $6.00 as ATS-36L34R [1959] 5p.

A further development of the method of preparing liberation of sulfides by using selective oxidation and subsequently chromatography was made on petroleum distillates. Sulfurous-aromatic concentrates from fractions of camomile oil with a 175 - 300° boiling point (fractional yield in petroleum 17.2%) were used as the object of investigation. This petroleum is a typical representative of petroleum from the Devon outcrops of the Uralo-Povolzh'. (Extracted from the report)

Reynst, F. H.
PULSATING COMBUSTION OF PULVERIZED COAL, tr. by L. B. P. 7p. (4 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10166

Trans. of Chaleur et Industrie (France) 1948, v. 29 [no. 272] p. 74-76.

Electrical and Electronic Engineering

ALUMINUM IN ARMORED ELECTRIC CABLES; COMPARISON WITH COPPER. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 60-10199

Trans. of QST Français (France) 1930, v. 11, p. 28-30.

DIN VDE 6430 [AND] DIN VDE 6440. [1959] 5p. (1 fig. omitted) 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10194

Trans. of unidentified mono.

Specifications are presented according to the following outline:
DIN VDE 6430
- Conductors
  - Properties
  - Test
  - Tolerances
- Insulation
  - General
  - Characteristics
- Size tests
- Application of the insulation

DIN VDE 6440
- Conductors
- Properties
- Permissible variations

Insulation
- General
- Characteristics

Application of the insulation
Testing of wire size
Testing by means of the mercury apparatus
Scope of the test

IMPROVEMENT IN MICROPHONES, tr. by J. C. Levy. 28 Aug 59, 4p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19221

Trans. of French patent 1,136,866, gr. 12, cl. 2, appl. 1 Oct 55, granted 7 Jan 57, pub. 21 May 57, by Melodium S. A., France.

The improvement consists in placing at least two baffles of suitable dimensions and profile near the diaphragm. The pressure on the diaphragm increases through diffraction of the acoustical wave at its edges and results in increased efficiency of the microphone proper, especially at frequencies of an elevated number of periods.

*RADIOTEKHNIKA I ELEKTRONIKA (USSR) 1959, V. 4, NO. 7, P. 1071-1228 (Radio Engineering and Electronics). [1959] 1v. SOV-109-4-7-(1-25)/25.
Order from OTS $0.70, $4.00/6 mo. PB 141 106T-18
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. ELEKTROTEKHNIKA (USSR) 1959, NO. 4, P. 1-275 (Journal of Abstracts. Electrical Engineering). [1959] 1v. SOV-112-59-4-(6383-8344).
Order from OTS $1.40, $7.50/6 mo. PB 141 109T-7
Foreign $1.65, $9.00/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

10,000 KM. OF TELEPHONE CABLE IN GERMANY. [1959] [1]p.
Order from SLA mi$1.80, ph$1.80 60-10209

Trans. of Europäischer Fernsprechdienst (Germany) 1930, no. 19, p. 287-288.

An encomium.

VESTNIK SVYAZI (USSR) 1959, NO. 9, P. 1-33 (Herald of Communications). [1959] SOV-111-59-9-(1-31)/31.
Order from OTS $0.60, $3.50/6 mo. PB 141 108T-19
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Aigner, Franz.
A NEW HIGH FREQUENCY LIGHT RELAY. [1959] 11p. 15 refs.
Order from SLA mi$2.40, ph$3.30 60-10193

Trans. of [Hochfrequenztechnik und Elektroakustik] (Germany) 1923 [v. 21] p. 101-120.

Asch, E.
EXPLOSIBILITY LIMITS OF GASEOUS MIXTURES. [1959] 4p. (4 figs. 1 table 3 equations omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10302

Trans. of Zeitschrift für Technische Physik (Germany) 1923, v. 4, no. 12, p. 468-471.

Benecke, Heinrich.
A TUBE-VOLTMETER OF HIGH SENSITIVITY. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 60-10304

Trans. of Z[ei]ts[chrift] f[ür] Tech[nische] Physik (Germany) 1930, v. 11, no. 9, p. 361-363.

A tube voltmeter with an auxiliary A. C. potential is described. It possesses a strictly linear calibration curve and registers alternating potentials in fractions of a millivolt by means of an indicating instrument. The use of the tube voltmeter in a Wheatstone bridge circuit is described. (Author)

Cypra, H.
HEAVY-DUTY CONDENSERS FOR REACTIVE CURRENT COMPENSATIONS AND THEIR ECONOMY IN INDUSTRIAL INSTALLATIONS. [1959] 4p. (6 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10191

Trans. of Elektrizität im Bergbau (Germany) 1930, v. 5, no. 11, p. 216-219.

The load on the network of a public utility electrical plant and industrial power plants resulting from a low power factor necessitates an improvement in this factor in order to insure economical operation. Inasmuch as it is not always convenient under all the conditions prevailing in industrial plants to use "loaded" phase displacers, in most cases no-load phase displacers must be installed for the purpose of improving the power factor. While synchronous motors used to be employed almost exclusively, heavy-duty condensers have recently been given the preference, since they offer distinct advantages over the rotating devices. The heavy-duty condensers have a power consumption which is practically negligible and require no attendance and no particular space. They are, therefore, much superior to the synchronous motors and afford an economical method for the improvement of the power factor, an achievement which is quite doubtful under certain circumstances when synchronous motors are used. As a result of the simple and practical design of the heavy-duty condensers, their field of application is not limited at all. (Author)

Ewald, W.
ENAMELED WIRE. [1959] 4p. (14 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10307

Trans. of Z[ei]ts[chrift] f[ür] Instrumentenkunde (Germany) 1926, v. 46, [no. 5] p. 249-255.

Fenyö, Ladislaus.
FEED-BACK SUPPRESSORS FOR FOUR-WIRE LINES. [1959] [13]p. 4 refs.
Order from SLA mi$2.40, ph$3.30 60-10102

Trans. of Communication from the Central Lab., Werner Works of Siemens and Halske, A. G., Berlin (reprint from the VDE - professional rept. spec. no. 1929).

The feed-back suppressors described here in addition to suppressing the echo cause an increase in the stability of four-wire connections; simultaneously they offer the possibility of reducing the net attenuation of such connections. (Author)

Hashnel, Otto.
CRYSTAL STRUCTURE AND DEGLOMERATION OF LEAD. [1959] 13p. (19 figs. omitted) 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10267

Trans. of E[lektrische] N[achrichten]-T[echnik] (Germany) 1931, v. 8, no. 2, p. 77-88.

The metallographical investigation of 30-g heavy specimens of cast and normally cooled lead, afford the conclusion that the crystals in an unalloyed lead containing 99.997% pure lead show an average diameter of about 8 mm. These are the largest crystals which were found in cast lead, which had been solidified in the specified way. Lead containing 1, 2 or 3% of tin, affords, under the same conditions of solidification, only slightly smaller crystals than in the case of unalloyed lead. In contrast to this, a content of 1% of Bi affords about a 2/3 decrease in grain size, a content of 1% of Sb affords about 3/4 decrease and a 1% Zn content, as well as 1% of Cu, affords about a 7/8 decrease. All of the lead extruded from the lead cable press has considerably smaller crystals than the lead having the composition which was solidified from the liquid state. In this case also, the unalloyed lead again shows the largest crystals. The average diameter of the same amounts to from 0.25 to 0.3 mm. Lead which contains from 1 to 3% of tin also possesses, in the extruded state, only slightly smaller crystals than extruded pure lead. In contrast to this, extruded lead alloyed with 1% of Sb is much finer grained; its average grain diameter amounts to only about 0.03 mm. Thus, the addition of 1% of Sb in the case of extruded lead leads to a considerably stronger decrease in grain size than in the case of cast lead. In the first case this amount to 3/4, and in the second case to 9/10. The addition of tin, 1 to 3%, as well as the addition of 1% of antimony, has a very strong retarding affect upon the tendency of extracted lead to become coarsely crystalline. This retarding effect is so powerful that in the use of cable sheaths the question of an increase in grain size need not be considered, as, for instance, in overhead cables, which, as a result of the radiation of the sun, often become highly heated. A very slight copper content (0.1%) also reduces the tendency of the lead toward collective crystallization considerably. (Extracted from author's summary)

Käch, Alfred
ON THE QUESTION OF EFFICIENCY OF THERMO-ELECTRIC GENERATORS, tr. by R. Michel. [1958] 14p. 4 refs. Bureau of Ships Translation 651.
Order from LC or SLA mi$2.40, ph$3.30 59-12037

Trans. of ETZ Elektrotechnische Zeitschrift (Germany) 1957, [v. 78] 1 Mar.

Efficiencies of thermo-transformers are shown to be theoretically greater than had heretofore been generally thought possible.

Orlov, V. M. and Berkut, A. E.
THE USE OF ULTRA-VIOLET RADIATION FOR NEUTRALIZING STATIC ELECTRICITY CHARGES (Primeneniye Ul'trafioletovogo Izlucheniya dlya Neytralizatsii Zaryadov Staticheskogo Elektrichestva). Aug 59 [5]p. 1 ref. RTS no. 1125.
Order from LC or SLA mi$1.80, ph$1.80 59-19438

Trans. of Svetotekhnika (USSR) 1958, v. 4, no. 7, p. 26-27.

The effectiveness of the neutralizing action of ultraviolet radiation was investigated by determining the time of discharge of an electrostatically charged sheet of paper. A sheet of aluminum foil with a sheet of paper resting upon it was placed on a table insulated from the earth. The sheet of paper was electrified by means of an electrostatic generator to a voltage above 10 kilovolts. A source of ultraviolet radiation was placed above the paper and the times were measured during which the voltage on the paper fell to different levels. These measurements were made with various distances between the radiation source and the paper. Tabulated data from measurements with PRK lamps show that the nearer the lamp is placed to the electrified surface, the more effective is its action. Electrostatic charges on a moving electrified surface were also neutralized by means of mercury quartz lamps.

Rohde, Lothar.
NEW TYPE OF PIEZOELECTRIC CRYSTAL FOR FILTERING AND CONTROL. [1959] 7p. (18 figs. 11 figs. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10303

Trans. of Z[ei]ts[chrift] f[ür] Tech[nische] Physik (Germany) 1939, v. 20, no. 3, p. 75-80.

Rozenblat, M. A.
THE USE OF MAGNETIC AMPLIFIERS AS RELAYS AND OSCILLATORS. Oct 58, 46p. 21 refs.
Order from LC or SLA mi$3.30, ph$7.80 60-10093

Trans. of mono. Magnetic Amplifiers, Moscow, 1956, chap. 13, p. 694-769.

Discussions are presented on (1) the bistable operation of magnetic amplifiers with positive feedback, (2) the design of single-ended (reactor) contactless magnetic relays, (3) methods of stabilizing the make and break currents of contactless relays, (4) the make and break time of contactless magnetic relays, (5) ferroresonant relays, (6) magnetic triggers (relays), (7) the transient process in magnetostatic triggers, and (8) the operation of magnetic amplifiers as oscillators.

Schmitt, H. and Lux, L.
PHYSICAL TECHNOLOGICAL PROPERTIES OF AN INSULATING LAYER OF ALUMINUM OXIDE. [1959] 8p. (7 figs. omitted) 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10254

Trans. of Hauszeitschrift der V. A. W. u. d. Erftwerk A. G. für Aluminium (Germany) 1930, v. 2, no. 3, p. 75-81.

Travis, C. R.
ELIMINATION OF DISTURBANCES. [1959] 3p.
Order from SLA mi$1.80, ph$1.80 60-10215

Trans. of Filmtechnik (Germany) 1930, 3 May, p. 16-17.

Disturbances are summarized that are caused by trouble with the turntable, faulty records, too tight adjustment of the tone arm, incorrect "pull" of the sound box, incorrect needle angle, insufficient weight

of the sound box, too much mechanical resistance in the sound box, the use of incorrect needles, and improper handling of the apparatus.

Tsemmel', G. I.
ON THE DETERMINATION OF INVARIANT CRITERIA OF OCCLUSIVE (PLOSIVE) SOUNDS BY MEANS OF CLIPPED SPEECH SIGNALS. [1959] 3p.
Order from MDF $2.00 MDF T-137

Trans. of A[kademiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk] Izv[estiya]: Energ[etika] i Avto[matika] 1959, no. 4, p. 214-215.

Phonemes were analyzed according to their time characteristics by means of speech signals subjected to clipping (after which they retained only two possible values of amplitude). Prior to clipping, the 300-cycle frequency was suppressed 6 db relative to the 3000-cycle frequency. The clearness of the clipped speech remained high and sufficient data remained for the discernment of the separate phonemes. An analysis of oscillograms of the clipped speech established that occlusives located before vowels are distinguished by the initial section and duration of the noise impulse (intrinsic signal). Measurements of the quantities n and t in monosyllabic and disyllabic words containing P, T, and K with the vowels A, O, U, E, and Y indicated that soft variations in P, T, and K can be discriminated.

Tuschak, R.
SKIN EFFECT IN SOLID CONDUCTORS EMBEDDED IN CIRCULAR SLOTS. [1959] 26p.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3723

Trans. of Periodica Polytechn[ica] (Hungary) 1957, v. 1, no. 1, p. 27-51.

Calculation are described with which it is possible to determine the resistance and the slot leakage reactance of the solid conductors embedded in circular slots, taking into account the skin effect. Tables and diagrams show that with the geometric dimensions and frequencies, as they occur mostly in practice, the resistance increase factor plays an important part, and that the reactance decrease factor is in the vicinity of the unit. It was also found that the skin effect can cause considerable changes in the resistance of the copper damping windings of single-phase synchronous machines and of the starter cages, likewise made of copper, of self-starting polyphase synchronous machines, since the depth of penetration is relatively low at a frequency of 100 and 50 cycles, due to the low specific resistance of copper, so that the resistance increase factor is quite considerable over a bar diameter of 8 to 10 mm. The rotor impedance of asynchronous motors with double cage rotors can also be determined by means of the tables and diagrams reproduced here, if one or both cages are made of round bars. The effect of the eddy currents is generally not very great in this case, because the cages are normally made of brass, bronze aluminum bronze, etc., which materials have a much higher specific resistance than copper. Because of the relatively great depth of penetration, the resistance increase caused by the skin effect is not marked, even at larger diameters and frequencies of 50 cycles. In this case the additional loss of the eddy currents induced in the upper cage by the current and the corresponding additional resistance resp; are quite considerable.

Uny, C[lément].
COMPARISON STUDY OF RESISTANCE AND NOISE VARIATION IN THIN FILMS OF GOLD, SILVER AND COPPER. Sep 59, 5p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10126

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1959, v. 248, no. 11, p. 1655-1658.

Descriptions are presented of the evolution of resistance, deviations from Ohm's law and the effect of scintillation observed in a vacuum on relatively stable granular films of gold, silver and copper.

Zickner, G.
BRIDGE FOR VERY SMALL CAPACITY MEASUREMENTS. [1959] 7p. (6 figs. omitted) 14 refs.
Order from SLA mi$1.80, ph$1.80 60-10270

Trans. of E[lektrische] N[achrichten]-T[echnik] (Germany) 1930 [v. 7, no. 11] p. 443-448.

Mechanical Engineering

ENERGETIK (USSR) 1959, NO. 10, P. 1-40 (Power Engineer). [1959] 1v. SOV-91-59-10-(1-29)/29.
Order from OTS $0.60, $3.50/6 mo. PB 141 084T-21
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

TEPLOENERGETIKA (USSR) 1959 [V. 6] NO. 8, P. 3-96 (Heat Power Engineering). [1959] 1v. SOV-96-59-8-(1-27)/27.
Order from OTS $0.70, $4.00/6 mo. PB 141 089T-18
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Ordnance, Missiles, and Satellite Vehicles

Koelle, H. H.
AN APPROXIMATION METHOD TO COMPUTE ORBIT ROCKETS. June 59, 13p. 6 refs. Picatinny Arsenal Trans. no. 41.
Order from LC or SLA mi$2.40, ph$3.30 59-18161

Trans. of Raketentechnik und Raumfahrtforschung (West Germany) 1958, v. 2, no. 1, p. 8-12.

This analytical method of approximation for the computation of orbit rockets makes it possible to determine with a relatively small expenditure of time the most important parameters of structure and performance in a multistage rocket for missions from the earth's surface to an orbit of any altitude about the earth. A simplified method for the computation of long-range rockets may also be deduced from this method. As a numerical example, a typical three-stage orbit rocket is presented. (Author)

Scholze, O.
EFFECTIVE VALUES IN LONG RANGE BALLISTIC MISSILES. July 59 [23]p. 2 refs. Picatinny Arsenal Trans. no. 46.
Order from LC or SLA mi$2.70, ph$4.80 59-18473

Trans. of Raketentechnik und Raumfahrtforschung (West Germany) 1958, v. 2, no. 1, p. 2-8.

The present work deals with the flight path characteristics of intercontinental missiles, indicating that long-range ballistic rockets, long-range jet aircraft and satellite ferry rockets all show similar path characteristics, particularly in their impulse paths. Therefore, all three types may have the same kinds of rocket engines, the principal effective values of which are examined. Current programs on various long-range rockets are taken up last of all. (Author)

Sanitation and Safety Engineering

Belyakov, V. D., Ivanov, K. G., and Il'chenko, A. A.
THE EFFECTIVENESS OF HYGIENIC LAVAGE AS A METHOD OF DISINFECTING THE SKIN SURFACE. 2 Nov[59] 4p. 1 ref. JPRS: L-1038-N.
Order from OTS $0.50 59-13986

Trans. of Voyenno-Meditsinskiy Zhurnal (USSR) 1959, no. 5, p. 73-75.

Krotkov, F. G.
THE PROBLEM TO BE SOLVED BY SOVIET HYGIENISTS IN CONNECTION WITH THE DECISIONS OF THE 21ST CONGRESS OF THE CPSU. 6 Nov 59, 15p. JPRS: L-1040-N.
Order from OTS $0.50 59-13988

Trans. of Gigiyena i Sanitariya (USSR) 1959 [v. 24] no. 8, p. 3-11.

Increasing industrialization of the USSR will throw the emphasis of medical research into matters of industrial hygiene, e.g., toxicology as related to chemical engineering, problems relating to polution of water supplies and of the air, and sanitation of food, etc, in large institutions.

Voeto, J.
ANTIBACTERIAL ACTION OF DETERGENTS, tr. by P. M. M. 25 Feb 53 [14]p. 32 refs.
Order from SLA mi$2.40, ph$3.30 60-10005

Trans. of Parasitica (Belgium) 1950, v. 6, p. 98-106.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Grau, Reinhold.
USE OF STARCH DERIVATIVES IN MEAT CURING, tr. by B. Payne. 1953, 7p. 8 refs.
Order from SLA mi$1.80, ph$1.80 60-10115

Trans. of die Stärke (West Germany) 1951, v. 3 [no. 5] p. 112-115.

Madsen, Jens.
INVESTIGATION ON THE KEEPING-QUALITY OF PORK FROM ANIMALS WHICH HAVE BEEN FED FEED CONTAINING SUGAR, tr. by Carl Demrick. [1959] 9p.
Order from SLA mi$1.80, ph$1.80 59-20646

Trans. of Nordisk Jordbrugsforskning (Denmark) 1943, no. 6, p. 340-346.

Mialki, Werner.
COMMINUTION OF SOFT MATERIALS IN FOOD PREPARATION. II, tr. by P. M. M. 4 Nov 54, 8p.
Order from SLA mi$1.80, ph$1.80 60-10370

Partial trans. of Chem[ie]-Ing[enieur]-Technik (West Germany) 1953, v. 25 [no. 3] p. 137-141.

In order to judge correctly the importance of the trituration of meat from the standpoint of economy and material, it is necessary to know the relationship between the physical values of substances and physical influences during the mechanical process. Structure and behavior of the biocolloids are explained by the flow curves of meat preparations with different water and fat contents. (Author)

Seibel, W. and Bolling, H.
AUTOMATIC WATER DETERMINATION IN CEREAL PRODUCTS USING THE CARL FISHER REAGENT. 28 Oct 59, 14p. 5 refs.
Order from SLA mi$2.40, ph$3.30 60-10123

Trans. of Getreide und Mehl (West Germany) 1958, v. 8, no. 10, p. 73-76.

The tests were applied on wheat, rye, corn, rice, wheat flour, rye flour, doughs, starches, feeds and bread. The subjective errors were avoided by the application of the Dead-Stop method for determining of the end point. No special difficulties were observed with the cereal and cereal products while applying the Karl Fisher titration. For this determination it is to

be assumed that the material will be sufficiently disintegrated. According to the particle size and hardness of materials, the extraction duration varies from 5 to 6 minutes.

Shirokov, N. V. and Milovidova, M. K.
STARCH DETERMINATION IN SAUSAGE. [1959] 6p. 7 refs.
Order from SLA mi$1.80, ph$1.80 60-10145

Trans. of Zeitschrift für Untersuchung der Lebensmittel (Germany) 1935, v. 70, no. 4, p. 251-255.

Szanyi, I.
COMPOSITION OF ICE-CREAM POWDERS, tr. by P. M. M. 30 July 54, 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 50-10144

Trans. of Z[ei]tsch[rift für] Untersuch[ung] d[er] Lebensm[ittel] (Germany) 1935, v. 70, p. 204-205.

A chemical and microscopic examination of 12 different ice-cream powders showed them to contain a number of worthless, or even harmful, substitutes, including coal-tar dyes and rubber-like substances. They contained no vegetable substances which corresponded to their types, i.e., the lemon powder contained no lemon, the hazelnut contained no hazelnut, etc.

Winckel, Max.
THE DRYING INDUSTRY (EGG INDUSTRY). III. [1959] 5p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10358

Trans. of Chemiker-Zeitung (Germany) 1925, v. 49 [no. 31] p. 229-230.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

APPARATUS FOR THE CONTINUED CONVEYANCE OF CUBE-SHAPED ARTICLES WHICH AFTER ENTERING A CHANNEL PRESSED BEHIND AND AGAINST ONE ANOTHER ARE SEPARATED FOR STAMPING ONE OF THEIR SURFACES, tr. by J. C. Levy. 23 Sep 59, 4p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19757

Trans. of Swiss patent 75,722, cl. 125c, appl. 23 Apr 17, pub. 1 Sep 17, by Fabrik von Maggis Nahrungsmitteln, Kempttal.

The invention is characterized in that, shortly after the articles have been pushed in the channel behind and against one another, the foremost one is engaged by two laterally arranged conveyer belts and continued in its conveyance with such rapidity as to cause a space to be produced between it and the following articles. In their continued conveyance the articles are no longer pressed against each other but are separated from each other by intervening spaces and move forward in the channel portion whose side walls constitute the conveyer belts. This avoids the formation of a column of articles pressing against each other throughout the entire length of the channel as well as the incurrence of deformations or damage to the articles, at the same time relieving the mechanism pushing the articles in the channel. The back surface of each of the individual articles which the front face of the following article had been pressing against is then stamped from beneath through one of the intervening spaces.

PHONOGRAPH. [1959] 2p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-10225

Trans. of Danish patent 35339, cl. 42, announced 7 Dec 25, issued 25 Nov 25, protected from 3 Oct 24, priority pleaded from 23 Apr 24 (date of appl. in Germany) by Carl Lindström, Ltd., Berlin, Ger.

The phonograph, with metal tone-channel and wooden funnel, is characterized by the placing of a perforated screen between the tone-channel and the wooden funnel. Suitable sound-absorbing material is placed between the tone-channel and the perforated screen and between the latter and the wooden funnel.

Bleck, J.
THE ADVANTAGE OF PUSH-BUTTON CONTROL ON MACHINE TOOLS. [1959] 5p. (8 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10192

Trans. of die Werkzeugmaschine (Germany) 1929, v. 33, no. 3, p. 41-44.

Marival, Jean.
STROBOSCOPIC PHOTOGRAPHY AT ONE MILLIONTH OF A SECOND AFFORDS A VALUABLE CONTROL IN INDUSTRY. [1959] 6p. (1 fig. omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10286

Trans. of unidentified mono.

Three examples are given of the application of stroboscopic photography at a millionth of a second. Reference is made to previous articles, evidently by the same author, all of which appeared in La Science et la Vie, numbers 133, 151, 102, 153, and 163.

Shaw, M. C. and Hölken, W.
ABOUT THE SELF EXCITING VIBRATIONS DURING MACHINING. [1959] [12]p.
Order from SLA mi$2.40, ph$3.30 59-17784

Trans. of Industrie Anzeiger (West Germany) 1957, 6 Aug, p. 961-964.

For both types of self exciting vibrations which occur during metal machining, the excitation and damping energy of each period were studied. The first type of self exciting vibration occurs when the system tool-material vibrates approximately at the single frequency

of the free tool (for example ≈2000 cycles). Arnold has correctly recognized as the chief cause of this type of vibration a decrease of the cutting force with the cutting speed. The inference here is also important that like the corresponding power-speed curve it comes in the question, which is true under dynamic conditions. The tool movement of this vibration is chiefly in the direction of the principal cutting force. Equation 12 furnishes an expression for the amplitude of this one dimensional vibrational movement. The second type of self exciting vibrations occur when the frequency of the system tool-material approximately is that of the free material (≈150 cycles). It is shown repeatedly that the principle cause of this vibration is due to the variation of the shear angle which occurs by this, that during chatter a lowering of the free surface periodically changes. Equations for the excitation - and damping energies of each period are derived for these types of vibrations. A calculation of the amplitude of this two dimensional vibration is not possible. The energy equations can be qualitively discussed when the vibrational amplitude in the feed direction can be reduced. (Author)

Späth, W.
DETERMINATION OF THE AVERAGE LIFE OF TECHNICAL EQUIPMENT. [1959] [17]p. 11 refs.
Order from SLA mi$2.40, ph$3.30 60-10239

Trans. of Konstruktion (Germany) 1951, v. 3, no. 2, p. 50-52.

For characterizing the durability of a technical installation, the conventional concept of life may be replaced by the reciprocal value, i.e., the rate of destruction. When using one or the other of these two equivalent characteristics as a basis, the usual arithmetic mean of a series of similar parts will lead to entirely different results. Consequently, it is suggested to use the half-value period as a useful value. The conclusions for practical application are explained on the example of antifriction bearings. (Author)

Engines and Propulsion Systems

Ehrhart, Fritz.
TURBO COOLING. [1959] [13]p. (11 figs. omitted) 12 refs.
Order from SLA mi$2.40, ph$3.30 60-10043

Trans. of MTZ [Motortechnische Zeitschrift] (West Germany) 1959, v. 20, no. 8, p. 313-316.

By installation of a turbocharger into the cooling process of a supercharged diesel engine it is possible to lower the temperature of the air charge below the temperature of the cooling medium at the intake of a commercial air charge cooler and thus reduce considerably the thermal strain on exhaust valves, exhaust pipes and turbochargers for engines with a high mean effective pressure and to permit an additional increase of the mean effective pressure. The use of two air charge coolers in contrast to the use of only one cooler is of advantage since the exhaust gas turbine can be operated at lower circumferential velocities; in addition, the pressure in the exhaust system is lowered resulting in an increase in the economy of the engine. (Author)

Hubber, Eugen Wilhelm.
CONTRIBUTION TO THE CALCULATION OF FLOW PROCESSES, ESPECIALLY OF ALTERNATING CHARGING PROCESSES IN INTERNAL COMBUSTION ENGINES WITH REGARD TO INTERMITTENT FLOW. [1959] [28]p. (17 figs. refs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10047

Trans. of VDI-Forschungsheft (West Germany) 1957, no. 462, p. 7-13.

A theoretical investigation is presented of the extent to which and the limits within which it is justified to neglect the influence of elastic vibrations in contrast to the inertia effects of the gas column which must be accelerated and retarded during alternating charging processes.

Kovalev, N. N., Prigorovskiy, N. I. and others.
INVESTIGATION OF THE PRESSURES AND STRESSES ACTING ON THE RUNNER BLADES OF HYDRAULIC TURBINES AT THE NARVA HYDRO-ELECTRIC POWER STATION (Issledovaniye Davlenii i Napryazhenii na Lopasti Rabochego Kolesa Gidroturbiny Narvskoy GES). Sep 59 [12]p. 5 refs. RTS no. 1113.
Order from LC or SLA mi$2.40, ph$3.30 59-19812

Trans. of Energomashinostroyeniye (USSR) 1959 [v. 5] no. 1, p. 29-32.

Stoll, H. and Bauer, H.
MEASUREMENTS OF EXHAUST GASSES IN DIESEL ENGINES (Rauchgasmessung bei Dieselmotoren) [1959] [24]p. (foreign text included) 8 refs.
Order from SLA mi$2.70, ph$4.80 59-17621

Trans. of MTZ; [Motortechnische Zeitschrift] (West Germany) 1957, v. 18, no. 5, p. 127-131.

Composition and origins of Diesel smoke are described. A simple and safe device (the Bosch smoke tester EFAW 78) is described which is suitable for measurements on the test stand as well as on the road.

Machine Parts and Mechanisms

ATE ROTATING VANE-TYPE PUMPS FOR OIL PRESSURES. [1959] [4]p.
Order from SLA mi$1.80, ph$1.80 59-20984

Trans. of Verkehr und Technik (Germany) 1956 [v. 9] no. 4, p. 37-38.

Commercial production is announced of pumps which are capable of pressures up to 150 atm and deliver up to 60 liters of hydraulic oil per minute although with special constructions they are only slightly larger than a fist and weigh less than 1 kg.

VALVE WITH RESILIENT PACKING. 17 Aug 59, 4p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19220

Trans. of French patent 1 056 327, gr. 5, cl. 3, appl. 21 Feb 52, pub. 25 Feb 54, by Etablissements Jean Lefebvre.

The valve is characterized by being made up of 2 half-parts, held together by screws or bolts, enclosing a resilient packing formed as a rigid duct, ending at each end in a flange for forming a joint. This resilient packing can be more or less flattened and tightened until it is closed by a scoop-shaped piece whose threaded bar screws into a nut controlled by the handle. The resilient packing is provided exteriorly with 2 pins in the same alignment to attach this packing to the valve body and the scoop-shaped piece, in such a way as to facilitate opening the conduit when the fluid flow pressure is insufficient. The upper part of the scoop has a spur on each side projecting from the valve body, forming an opening indicator.

Chisu, A., Muncaciu, G., and Lorant, P.
TESTING MACHINE FOR BEARINGS AND SOME RESULTS OBTAINED ON DUCTILE-IRON BEARINGS WITH A PEARLITIC-FERRITIC STRUCTURE. [1959] 1700 words.
Order from HB $4.75 HB-4711

Trans. of Metalurgia si Constr[uctia] de Masini (Rumania) 1957 [v. 9] no. 12, p. 30-34.

Description of a Rumanian-developed testing machine for securing information on the properties of bearings. Details on drive; frame with shaft; balance for load; friction balance; measuring and control apparatus. Test results on performance of nodular cast iron (3.24% C, 0.68 Mn, 1.72 Si, 0.14 P, 0.03 S, 0.01 Mg) as bearing material; specific pressures sustained; most suitable microstructure, etc. Possible uses of testing machine: study of bearings of any material; efficiency of lubricants; determination of frictional coefficients under various operating conditions; of oil pressure with hydrodynamic lubrication. (HB abstract)

Edel'shteyn, M. I.
ON THE DIMENSIONING OF COMPONENTS IN THE RECONDITIONING OF TAPERED RADIAL THRUST ROLLER BEARINGS (O Komplektovanii Konicheskikh Radial'no-upornykh Rolikopodshipnikov pri ikh Remonte). [1959] [17]p. (1 table omitted).
Order from LC or SLA mi$2.40, ph$3.30 60-10260

Trans. of Podshipnik (USSR) 1953, no. 8, p. 1-5.

Relations are derived which can be used in the selection of components in the manufacture of new tapered roller bearings or in reassembling a tapered roller bearing with reground traces.

Laguntsov, I.
INFLUENCE OF THE NONMETALLIC INCLUSIONS IN THE STEEL ON THE LONGEVITY OF ROLLING BEARINGS. [1959] 15p. (11 figs. omitted) 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10261

Trans. from Podshipnik (USSR) 1940, no. 9.

Wear- and fatigue-tests in the laboratory and the regular inspection of finished bearings showed that (1) sulphide inclusions in the form of MnS in the ballbearing steel accelerate failure of the bearing due to the natural wear, since the brittle MnS inclusions crumbled off, and erode the bearing surface in further operation; (2) the nonmetallic inclusions collect about themselves tensions and thereby diminish the resistance of the steel to fatigue, since a high tension concentration leads to formation of microscratches, which, in gradually widening, later cause destruction of the individual part; and (3) if they emerge to the running surface of the bearing, the nonmetallic inclusions lower the limit of the surface fatigue of the steel, through which there is favored more rapid formation of small furrows and failure of the bearing. The best durality in operation was shown by the bearing which had a contamination of the material with slag inclusions (sulphides, oxides) of less than 1.0 note of the SKF scale at a sum of not more than 2.0 notes. The majority of the bearings which made only 50% of the norm exhibit a higher contamination of the steel with slag inclusions of 3.4 to 4.0 notes in the sum (sulphides plus oxides) and of 1.5 to 2.0 notes according to each of the constituent parts.

Lohmann, G.
INVESTIGATIONS INTO THE RUNNING NOISE OF ROLLER BEARINGS. [1959] 43p. 10 refs.
Order from SLA mi$3.30, ph$7.80 60-10238

Trans. of Konstruktion (Germany) 1953, v. 5, no. 2, p. 38-46 and no. 3, p. 85-90.

The fundamental possibilities of reducing the running noise of roller bearings are discussed from the point of view of the machine constructor who wishes to employ such bearings and who is obliged to take into account the demand for silent running. The explanations regarding the origin of the running noise in roller bearings are related to measurements of sound waves in air and in solid bodies, and to examinations of the mechanical accuracy of the bearings. The necessity of a visual test apparatus for the investigation of silent running roller bearings is emphasized on account of the difficulty entailed in their manufacture. The essential requirements for such a test apparatus are indicated. (Author)

Morozov, Alexander.
FROM AUTOMATIC LATHES TO AUTOMATIC PLANTS. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 60-10262

Trans. of excerpts from [Izvestiya] (USSR) 1956, Apr.

An encomium.

Mundt, Robert.
CALCULATION AND CONSTRUCTION OF ROLLER BEARING AXLE-BOXES. [1959] [40]p. 16 refs.
Order from SLA mi$3.00, ph$6.30 60-10233

Trans. of Glasers Annalen (Germany) 1953, v. 77, no. 8, p. 219-227.

Correct measurement is the basis of satisfactory roller bearing axle-boxes. New experience has been gained in the sphere of bearing capacity of anti-friction bearings which will affect the dimensions of roller bearing axle-boxes in the future. Based on this knowledge, new roller bearings have been produced or the former kinds have been checked over and remodelled. To include the forces arising with certainty is a prerequisite for calculating the probable service life. Correct fitting, effective sealing, correct lubrication and servicing are also essential for really getting the best service from the bearing. From this experience, roller bearing axle-box constructions have been developed which are adapted to the actual operating conditions and requirements and which have proved satisfactory. (Author)

Mundt, Robert.
FAILURE OF ROLLER BEARINGS DUE TO METAL FATIGUE AND SAFE LOADS FOR ANTI-FRICTION RADIAL BEARINGS: EXTRACTS. Doctoral Thesis. [1959] 16p. (12 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-20580

Trans. of unidentified [German] mono. Berlin, n. d.

A method is shown by which the safe load for straight roller bearings is to be computed. The causes of bearing failure are considered in their combinations, in order to determine the safe bearing load, for the different operating conditions. All computations are made for pulsationless loads. If the load is varying and if impacts are acting upon the bearing, the action of these impacts is to be taken in consideration by a recalculation of the bearing life.

Niemann, G. and Kraupner, K. W.
THE PLASTIC BEHAVIOUR OF ROTATING STEEL ROLLERS HAVING POINT CONTACT. [1959] [45]p. (2 figs. omitted) 8 refs.
Order from SLA mi$3.30, ph$7.80 60-10234

Trans. of VDI-Forschungsheft (West Germany) 1952, no. 434, p. 1-15.

The effect of number of overrollings, hardness, curvature, load, and preload is investigated experimentally on beginning and development of the plastic deformation of pairs of rollers. (Author)

Renaud, Pierre.
THE FERLEC ELECTROMAGNETIC CLUTCH. [1959] [23]p.
Order from SLA mi$2.70, ph$4.80 59-20988

Trans. of S[ociete des] I[ngénieurs] de l'A[utomobile]. Journal (France) 1955 [v. 28] June/July, p. 337-342.

A lecture.

Sirota, A. M. and Mal'tsev, B. K.
HIGH-PRESSURE PUMP WITHOUT A STUFFING BOX. [1959] 3p. 5 refs.
Order from MDF $2.00 MDF S-136

Trans. of Inzhen[erno]-Fizich[eskiy] Zh[urnal] (USSR) 1959, v. 2, no. 1, p. 93-95.

Tests showed that a standard asynchronous electric motor with stator insulated with an MBK-2 compound can be used under water and certain other electrically conducting fluids at pressures to to 500 kg/sq cm and possibly at even much higher pressures.

Wasilewski, K.
DIE-CAST DRILLING BITS. [1959] [8]p.
Order from SLA mi$1.80, ph$1.80 60-10052

Trans. of Przeglad Gorniczy (Poland) 1954 [v. 10] no. 10, p. 357-359, translated from article "Investigation of Armed Die-cast Drilling Bits", by G. N. Pokrovski and W. D. Greshkin, in Ugol' (USSR) 1953 [v. 28] no. 10, p. 34ff.

Wellinger, K., Keil, E., and Glaubits, H.
GEAR TESTING STAND WITH OUTPUT UP TO 1000 H. P. AND ROTATIONAL SPEEDS OF 200-4000 R. P. M. [1959] 10p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10231

Trans. of V[erein] D[eutscher] I[ngenieure. Zeitschrift (West Germany) 1951, v. 93, no. 9, p. 236-238].

The general principles for a test stand of the straight-run method are discussed. The assembly of the mechanical, electric, and testing parts of the equipment is described, and the numerous application possibilities for this test stand are pointed out.

Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1959 [VOL. 12] NO. 9, P. 3-96 (Automatic Welding). [1959] [20]p. SOV-125-59-9-(1-16)/16.
Order from OTS $0.50, $3.00/6 mo. PB 141 125T-20
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

CALCULATION OF POWER CONSUMPTION IN ELECTRIC RESISTANCE WELDING. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 60-10249

Trans. of Arts et Metiers (France) 1936, no. 191, p. 164-166.

LITEYNOYE PROIZVODSTVO (USSR) 1959, NO. 8, P. 1-48 (Foundry Practice). [1959] 1v. SOV-128-59-8-(1-29)/29.
Order from OTS $0.50, $3.00/6 mo. PB 141 130T-15
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*PRIBOROSTROYENIYE (USSR) 1959, NO. 7, P. 1-32 (Instrument Manufacture). [1959] [18]p. SOV-119-59-7-(1-18)/18.
Order from OTS $0.50, $3.00/6 mo. PB 141 119T-19
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

SIMPLE STATISTICAL AIDS IN QUALITY CONTROL. [1959] 10p. (5 figs. 5 equations refs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10201

Trans. of Elektrotechnicky Obzor (Czechoslovakia) 1938, v. 27, 2 Sep. p. 554-558.

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT [NO. 16, 15 DEC 59]. [1959] [54]p. 98 refs.
Order from LC or SLA mi$3.60, ph$9.30 60-13156

Trans. of unevaluated information selected from Russian-language publications.

*VESTNIK MASHINOSTROYENIYA (USSR) 1959 [V. 39] NO. 5, P. 3-87 (Herald of Machine Building). [1959] 1v. SOV-122-59-5-(1-32)/32.
Order from OTS $0.80, $4.50/6 mo. PB 141 122T-10
Foregin $1.05, $6.00/6 mo.

Consists of abstracts in English.

Berezin, B. V.
OPERATION OF THE GRID OF A HAMMER MILL (O Rabote Reshetki Molotkovoy Drobilki). Aug 59 [8]p. 6 refs. RTS no. 1020.
Order from LC or SLA mi$1.80, ph$1.80 59-19436

Trans. of Koks i Khimiya (USSR) 1957, no. 5, p. 51-55.

Reversible hammer mills, pulverizing a wet coal charge, operating at 735 rpm (which corresponds to a peripheral hammer speed of 55.8 m/sec) were investigated at the Makeevka coke by-products works. The mill is provided with gratings. Results showed that the grid sections of the hammer mill which are swept and not swept by the hammers do not play an equal part in the evacuation of the product. Most of the product leaves the mill through the openings in the swept sections, only 10 to 15% leaves through the openings in the non-swept sections. Successive sections of the grid work at varying loadings. The smaller the charge, the less is the loading on each successive section. With large charges, the difference in the loading of successive sections is smoothed out. As the material moves through the grid zone, there is a decrease in the size of the largest particles and in the number of the relatively coarse particles passing out of the mill through successive sections of the grid, and hence an increase in fineness of pulverization. A reduction in the distance between the hammers and the grid is accompanied by a reduction in the output of the latter, by an increase in fineness of pulverization and an increase in the amount of dust in the product. The fineness of pulverization deteriorates and the amount of dust in the product increases in proportion to the wear on the hammers. The wear of the grid has practically no effect on the fineness of pulverization, but the amount of dust formed when working with a worn grid is considerably greater than when working with worn hammers.

[Bosano, L.].
VACUUM-DISCHARGE FURNACES. [1959] 5p. (6 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10437

Trans. of Nature, Paris (France) 1923 [v. 51, no. 2566] p. 364-366.

Brandt, W. R.
FLOW PHENOMENA IN ALUMINUM DIE-CASTING. [1959] [26]p. (31 figs. 5 tables omitted).
Order from SLA mi$2.70, ph$4.80 60-10207

Trans. of Tech[nisches] Zentr[allblatt] für Praktische Metallbearbeitung (Germany) 1937, v. 47 [no. 19/20] p. 893-899.

An apparatus was developed with which it was possible to determine the processes occurring when the die casting mold is filled. The following determinations can be made on the basis of the results of the tests. The metal flowing into the gate of a die casting mold changes in cross section; the metal flows in a direction determined in the main, by the gate but not in a form determined by it. The stream of inflowing metal widens in cross section until it touches the mold walls. The widened stream flows in the form and direction determined by the mold walls up to the farthest point of the mold and fills the latter from front to back. Corresponding to the increase of cross section of the metal stream, the speed with which the mold is traversed, decreases. In addition, speed is lost as a result of the resistance of the air in the mold. The shortest periods for filling the mold by the metallic stream result when the width of gate amounts to 20 to 30% of the width of the member. Since the movements of the metallic stream in the mold and gate are completed approximately simultaneously, the solidification of the casting metal in the mold and in the gate occurs approximately at the same time. Therefore, it appears improbable that any great amount of metal can be subsequently forced into the already solidifying interior of the casting through the still liquid gate. During solidification of the casting, the edge zone lying next to the cooled mold walls must solidify first. The loss in volume of the casting metal is exhibited in the interior of the member in the form of pipes. When subsequent pressure is not possible and no rather large amounts of air are enclosed, the volume of the pipe in the case of aluminium amount to 6.5% of the volume of the casting. (Author)

Brovman, M. Ya.
DEFORMATION OF THE WORK MATERIAL IN CROSS ROLLING. [1959].
Order from BISI £4 5s BISITS 1456

Trans. of *Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl, p. 22-33.

A method of calculation is presented and a condition for critical reduction producing axial cavity-formation is arrived at. The values are close to those obtained by Smirnov's method and also correspond with measured values. (J.I.S.I. abstract)

Chekmarev, A. P. [Dinnik, A. A.] and others.
ON MAXIMUM CONTACT ANGLES IN ROLLING I-III. [1959] [14]p. (2 figs. omitted) 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10030

Trans. of *Stal' (USSR) 1959 [v. 19, no. 5] p. 444-447.

Part I: The contact-angle ratio, $\alpha_y/\alpha_z = 1.25$ to 1.35, which was experimentally derived by S. V. Makayev (Stal 16: no. 12, 1956), is explained by the sharp drop in the friction coefficient during the transition from the initial gripping stage to the established process as a result of the effect of slag. A steady rolling process can be achieved at large contact angles ($\alpha > \beta$) by preliminary slag removal and forced pushing of the metal into the roll. Part II: According to the old theory, not only the forward flow but also the spread at $\beta = \alpha/2$ should be zero. The fact that there is a considerable spread at slip and at rolling by applying a pushing force confirms the new theory which says that there is forward flow at any value of the friction coefficient and consequently there is also a spread because there is always a section in the contact arc where the varying angle of contact surfaces is less than the angle of friction. Part III: The maximum contact angle during the established movement is shown to be always smaller than twice the angle of friction during grip.

Conn, W. M.
APPROXIMATE EQUILIBRIUM CONDITIONS IN THE MOLTEN POOLS OF METAL AND SLAG IN ARC WELDING; EXAMPLE ALUMINA SILICA FLUXES. [1959].
Order from BISI £5 BISITS 1468

Trans. of Schweissen u[nd] Schneiden (West Germany) 1958 [v. 10] May, p. 174-181.

The method of producing fluxes for submerged arc welding and the conditions for testing are discussed. Results of tests are given and the rate of travel of a gas bubble through molten metal and slag are considered. This is followed by considerations of the influence of viscosity, surface tension, density, rates of crystallization and melting, thermal conductivity and also diffusion. (J.I.S.I. abstract)

Gerling, Wilhelm and Zimmer, Karl-Otto.
THE KILLING OF DEEP-DRAWING STEEL IN THE MOULD (CHEMICALLY CAPPED STEEL INGOTS). [1959] [22]p. (17 figs. omitted) 7 refs.
Order from SLA mi$2.70, ph$4.80 60-10242

Trans. of Stahl und Eisen (West Germany) 1956, v. 76, no. 13, p. 799-805.

This report concerns the production and possibilities of application of steels killed in the mold. It has been shown that the thin "lard layer" of effervescent ingots is retained during rolling and processing and gives remarkably good technological characteristics to the deep-drawing steel; it has an aging resistance, storing and good pickling properties in comparison to the effervescent steel; it has a lower Rockwell hardness, lower yield point and better deep-drawing ability in comparison to killed steel. The production of the steel shows that the pig iron charge is smaller than for effervescent or killed steel. By observing special precautions it is possible to produce boiler plates according to this process which are resistant to aging. (Author)

Gottsenalk, Ed. and Lutze, W. F.
INTRODUCTION OF I S A FITS INTO GERMAN INDUSTRY. [1959] 28p. (28 figs. footnotes omitted).
Order from SLA mi$2.70, $4.80 60-10252

Trans. of Technische Mitteilungen Krupp (Germany) 1938, v. 6, no. 7, p. 151-166.

The standards of large industrial groups are discussed. The selections individually made by these groups are compared with the basic concept of a selection. The common features of the fit standards of various industrial groups are summarized in a figure showing the tolerances standardized for German industry. The fit standards are also used which are the bases or basic norms for all branches of industry, e.g., standards for shaft ends, anti-friction bearings, equipment, plastic bearings, etc. The gage equipment is also considered. The selections from the ISA fits recommended for large machine builders are discussed in detail. A smaller selection of fits for simpler shop conditions is also given. A new relationship for showing the tolerance fields is used and its advantages explained. The suggestion of the German selection has been developed on the basis of detailed study of the tolerances previously used in German industry and fit selections of the German fit committee. The selection has also given consideration to the fits used in the German standards, transferred to ISA fits. The selection may be considered as a logical development of the limiting gages according to the Loewe-Schlesinger system (about 1906). This system also used the basic shaft with a ± tolerance; the zero line was the line of symmetry. In a further development, the standardization established the zero line as the limiting line for holes and shafts, whereupon the systems basic shaft and basic hole, were formed. In searching for one selection from these two systems of standardization, the transition proposal of Prof. Gottwein is the most significant. The selections for large industries are based on this transition system but are expanded to cover the requirements of the machine industry and the ISA tolerances are used. (Author)

Karg, H. R.
SPEED NECESSARY FOR SUSPENSION AND ITS DETERMINATION FOR PNEUMATIC CONVEYING OF MATERIALS. [1959] 5p. (1 fig. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10282

Trans. of Fördertechnik (Germany) 1930, 9 May, p. 191-193.

The importance of the determination of the speed necessary for suspension for the pneumatic conveying of materials is too often underestimated. In this article the method of making this determination is described, and a simple apparatus by means of which satisfactory results have been attained. (Author)

Kurtepov, M. M. and Gryaznova, A. S.
CORROSION OF STAINLESS STEEL WELDS IN ACID SOLUTIONS [Korroziya Svarnykh Soyedineniy Nerzhaveyushchikh Staley v Kislykh Rastvorakh]. [1959] 1300 words.
Order from HB $3.50 HB-4571

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 41-44.

Effect of various heat treatments on corrosion resistance (in boiling 55% nitric acid) of argonarc welds in 18-8 and 18-8 Ti steel. Heat treatments used: water quench; short-period tempering after heat treatment; stabilizing anneal with or without subsequent short-time tempering. Site of knife-line attack; heat treatment resulting in deepest corrosion; effect of stabilization of 18-8 with titanium on intergranular corrosion and on behavior in acid oxidizing solutions. (HB abstract)

Lauke, H. L.
SYNCHRONIZATION OF OUTPUT IN CONTINUOUS-FLOW PRODUCTION. [1959] [88]p. (75 figs. omitted) 13 refs.
Order from SLA mi$4.80, ph$13.80 60-10217

Trans. of unidentified mono. Berlin, 1928.

Contents:
Types of manufacturing systems
Preliminary conditions and preliminary work necessary for the installation of continuous-flow manufacture
Rhythm and its significance in speed of flow of the work and the production of rhythm
The working diagram of continuous-flow operation
Synchronization of manual operations
Examples from practice in synchronizing manual operations
Synchronization of output in machine operations
Examples from practice in synchronizing mechanical manufacturing operations
Degree of utilization of the equipment, degree of activity of the personnel and degree of occupation
Synchronization of output in series production where the products are varied
Comparison between the slide-conveyor system of group manufacture and the continuous-flow process of manufacture
Conclusions

Marinček, Borut.
CONTRIBUTION TO THE FORMATION OF SPHERICAL GRAPHITE IN CAST IRON. [1959] [36]p. (10 figs. omitted) 45 refs.
Order from SLA mi$3.00, ph$6.30 60-10241

Trans. of Giesserei (West Germany) 1954 [v. 41] no. 12, p. 313-320.

On the basis of determinations which result in a surface tension of molten cast iron containing spherical graphite treated with magnesium which is higher by 50% in comparison to an untreated cast iron, it could be shown that the formation of spherical graphite as well as the difference in surface tension of cast iron. The experiments furthermore led to the assumption that the surface tension of the melt is dependent on the oxygen and sulfur contents of molten iron. The graphite separation in a cast iron containing spherical graphite which has been treated with a sufficient amount of magnesium takes place in such a manner that the graphite nuclei are separated in a spherical form at a low temperature (supercooling) on account of the high surface tension of the melt. Simultaneously the graphite nuclei are completely surrounded by eutectic austenite and are separated from the melt. The continued growth of graphite in a spherical form takes place in such a manner that carbon is diffused through the graphite-surrounding layer of austenite. (Author)

Matsukawa, Tatsuo.
METAL-GRAPHITE ALLOYS. [1959] [12]p.
Order from SLA mi$2.40, ph$3.30 60-10255

Trans. of [Tanso] (Japan) 1954, v. 4, p. 9-12.

Brief discussions are presented on self-lubricating bearing metals (graphite 1 to 3%), pantograph slides (graphite 2 to 5%), sintered steel (graphite 0.5 to 4%), friction products (graphite 5 to 10%), and electrical contacts (graphite 10 to 50%). Graphite does not form any compounds with metal (except with iron) and, therefore, graphite is simply mixed with the sintered metal. A new method is announced for plating graphite powder with silver, copper, silver-copper alloy and copper-lead alloy.

Millon.
GANG-WORK INSPECTION LOADING POTS. [1959] 2p. (1 graph omitted).
Order from SLA mi$1.80, ph$1.80 60-10246

Trans. of unidentified mono. from Bureau d'Etudes, Paris.

Reference is made to a new system (the system is not described, possibly it is an award system) to apply to inspection personnel. The system is said to make for increased production (of batteries?) by a smaller number of persons.

Novikov, V. N.
EFFECT OF RESIDUAL STRESSES ON THE CONTACT FATIGUE STRENGTH OF ROLLS USED IN COLD ROLLING. [1959] [19]p. (3 figs. omitted) 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10232

Trans. of Metallovedeniye i [Termicheskaya] Obrabotka Metallov (USSR) 1957, no. 1, p. 43-50.

Paudrat, A[lexandre].
THE EFFECT OF SULFUR ON THE MACHINING OF STEELS, ESPECIALLY ON THE CUTTING SPEED AND TOOL WEAR, tr. by R. E. P. 16 Nov 54, 2p.
Order from SLA mi$1.80, ph$1.80 60-10160

Trans. of [Académie des Sciences, Paris]. Comptes Rendus (France) 1954 [v. 329, no. 15] p. 879-880.

The piercing with relative ease of sheets of 12% Mn Hadfield steel when the drill is coated with a mixture of grease and flowers of sulfur indicates that because of covalent bonds between the atoms in the midst of S on the same level in a hexagonal plane and on different levels between two planes, these planes slide over one another easily to bring about a lubrication effect.

Petit, J.
THE FABRICATION OF LARGE DIAMETER WELDED TUBES AT THE SEDAN FACTORY OF THE SOCIETE LORRAINE-ESCAUT. [1959].
Order from BISI £6 BISITS 1460

Trans. of [la] Techn[ique] Moderne (France) 1959 [v. 51] Apr, p. 197-206.

Contents: General characteristics; Production schedule; Description of the chain of production; Preparation; Shaping; Choice of process; Description of the twin arc unionmelt welding technique; Principle of the unionmelt process; Welding with two electrodes; Principle of the twin arc process; Welding installations - general; Description of an external welding machine; External welding operation; Electrical equipment for each external welding machine; External welding process; Description of the internal welding machine; Internal welding procedure; Internal welding apparatus; Finishing; Welding control.

Ryabov, V. R.
THE COMBINED AUTOMATIC WELDING OF SPHERICAL TANKS. 2 Nov 59, 5p. (5 figs. omitted) 3 refs. JPRS: L-1921-D.
Order from OTS $0.50 59-31028

Trans. of *Avtomaticheskaya Svarka (USSR) [1959, v. 12] no. 1, p. 87-91.

The technology of welding spherical tanks without backing rings is described. Argon-arc welding methods using tungsten electrodes for the root of the seam, followed by automatic welding of the remaining portion with flux also are described.

Schwier, Fritz.
INVESTIGATIONS IN PRACTICE OF THE INFLUENCE OF DRAWING TEMPERATURE ON THE MECHANICAL PROPERTIES OF STEEL WIRE. [1959] 22p. 20 refs.
Order from SLA mi$2.70, ph$4.80 60-10294

Trans. of Stahl und Eisen (West Germany) 1959 [v. 79, no. 20] p. 1385-1391.

In order to be able to control the effect on the mechanical properties of the higher drawing temperatures to be expected using increased drawing speeds, in the co-operative tests in which six mills participated, first was investigated the influence of drawing temperature during continuous production under the usual operational conditions. Using insufficient cooling with the usual drawing conditions and speeds the strength values were increased and the ductility properties were impaired. Using a retreatment of the wire by straightening or a redraw of small reduction the properties of the wire drawn with poorer cooling, could be improved, but without however attaining the values of wires which were drawn using satisfactory cooling. (Author)

Teterin, P. K.
SECONDARY CONDITIONS OF AXIAL ENGAGEMENT IN OBLIQUE ROLLING. [1959].
Order from BISI £2 15s BISITS 1480

Trans. of *Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl. p. 133-148.

Conditions are derived for some of the secondary conditions of axial engagement where the axial resistance of the plug is taken into account. To avoid cavitation in the center of the billet ahead of the plug and flaws in the hollows produced, minimum reduction ahead of the plug is applied. Two formulae for the reduction are quoted and neither takes into account coefficient of friction, roll diameter or feed angle. A new expression is derived and practical consequences are deduced. (J.I.S.I. abstract)

Transport, Traction and Hoist Facilities

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR [NO. 23, 21 DEC 59]. [1959] [115]p. 80 refs.
Order from LC or SLA mi$6.00, ph$18.30 60-13155

Trans. of unevaluated information selected from Russian-language publications.

Fink, Max.
CORRUGATION-FREE RAILS, CORRUGATION-FREE ANTI-FRICTION BEARINGS. (CONCLUSION) (die Riffelfreie Schiene, das Riffelfreie Wälzlager). [1959] [19]p. 2 refs.
Order from SLA mi$2.40, ph$3.30 60-10236

Trans. of Glasers Annalen (Germany) 1957, v. 81, no. 3, p. 91-94.

See also 60-10237

Fink, Max.
CORRUGATION-FREE RAILS, AND CORRUGATION-FREE ANTI-FRICTION BEARINGS. [PT. 1] (die Riffelfreie Schiene, das Riffelfreie Walzlager). [1959] [70]p. 27 refs.
Order from SLA mi$3.90, ph$10.80 60-10237

Trans. of Glasers Annalen (Germany) 1957, v. 81, no. 2, p. 36-49.

See also 60-10236

Hug, M.
RUBBER-SUSPENDED WHEEL SETS (Gummige - federte Radsätze). [1959] [15]p. 24 refs.
Order from SLA mi$2.40, ph$3.30 60-10235

Trans. of Glasers Annalen (Germany) 1955 [v. 79, no. 7] p. 219-227.

Machefert-Tassin, Y.
THE DEVELOPMENT OF ELECTRIC TRACTION IN THE USSR (l'Evolution de la Traction Électrique en U. R. S. S.) tr. by W. E. S. [1959] [30]p. (31 figs. omitted) 7 refs. H-3072.
Order from OTS $0.75 59-21037

Trans. of le Genie Civil (France) 1958, no. 24, p. 501-512.

Perotskaya, A. S. and Luchina, K. N.
THEORETICAL AND PRACTICAL CONFERENCE ON THE PROBLEMS OF NOISE CONTROL IN URBAN TRANSPORTATION. 6 Nov 59, 4p. JPRS: L-1042-N.
Order from OTS $0.50 59-13990

Trans. of Gigiyena i Sanitariya (USSR) 1959 [v. 24] no. 8, p. 83-84.

Ricart, W. P.
THE AUTOMOBILE IN TWENTY-FIVE YEARS, tr. by. R. E. P. 21 Mar 55 [18]p.
Order from SLA mi$2.40, ph$3.30 60-10050

Trans. of S[ociété des] I[ngénieurs de] l'A[utomobile]. Journal (France) 1954 [v. 27] Sep, p. 292-298.

There is no doubt that our 1978 automobiles, even if they do not have revolutionary mechanical changes, will be a great improvement over our present vehicles. It must be so because we live spurred on by the sacred fire of research - and by the pressures of competition and of economy. (Extracted from the report)

MATERIALS

Bäumel, A.
THE EFFECT OF ADDITIVES ON THE CORROSION BEHAVIOR OF STEEL IN CONCRETE. [1959] [24]p. 4 refs.
Order from SLA mi$2.70, ph$4.80 60-10244

Trans. of Zement-Kalk-Gips (West Germany) 1959, v. 12, no. 7, p. 294-305.

From the behavior of the current-voltage curves determined at concrete electrodes it can be inferred whether steel in concrete is liable to corrode or whether it is resistant to corrosion. An investigation of twelve commercial additives by means of this method showed that only additives containing chloride, when added to the concrete in fairly large quantities, have an adverse effect on the corrosion behavior of reinforcement. Current density/time curves at constant voltage are suitable, in the same way as current-voltage curves, for characterizing the condition of steel in concrete. If steel in concrete is polarized to within the range of evolution of oxygen, then corrosion of the reinforcement occurs also in concrete containing no additive. Satisfactory and lasting corrosion protection of steel in concrete or mortar is ensured only if the whole surface of the steel is coated with cement gel. The actual effect of the gel is that it functions as a largely invariable water reservoir which constantly provides an alkaline film of liquid on the steel surface, which keeps the steel passive. An adequate cover of dense concrete or mortar is necessary to protect the cement gel in the immediate vicinity of the steel from destruction by chemical influences of external origin. The local destruction of the passive layer on steel in concrete is an essential preliminary to the occurrence of stress corrosion. As it can be decided, by plotting current-voltage curves, whether steel in concrete is entirely passive or not, this method also provides a means of deciding whether stress corrosion is liable to occur in the concrete or mortar mix under consideration. (Published English summary)

Eitel, W. and Koppen, N.
THE USE OF CEMENT IN FOUNDRY SANDS. MICROSCOPIC INVESTIGATION OF THE REACTIONS BETWEEN CEMENT SAND MOLDS AND STEEL SLAGS. 21 Apr 55, 13p. (16 figs. omitted) 11 refs.
Order from SLA mi$2.40, ph$3.30 60-10094

Trans. of Giesserei, Tech[nische]-Wissensch[aftliche] Beihefte (West Germany) 1954, no. 14, p. 701-707.

A microscopic study of normal and sintered or fused cement sand mold test pieces indicated that the phenomenon of fusing is basically caused by the appearance of a skin of fusible but slightly viscous slag rich in magnetite and fayalite which may have become incompletely separated from the metal bath but which enters into the phenomenon during casting and reacts with the cement sand mold in a very detrimental way. The Ca content of the mold is not increased in order to penetrate into this skin to an appreciable extent, instead it is used up in the melt reaction with the sand grains to form wollastonite-$FeSiO_3$ solid solution and pseudo-wollastonite. This adhesion can only be effectively prevented if precautions are taken in the foundry to prevent the occurrence of magnetite-fayalite slags in the metal bath. There is only a very slight improvement when instead of ordinary Portland cement one uses a "white" Portland cement that is poor in alkalis and iron oxides. Because of the relatively small amount of cement compared to the amount

of quartz sand, the effect of the flux in the cement is of minor importance. No harm is done if such an alkali carrier is replaced by another loosening (i. e., promoting the gas permeability of the sand) addition such as sawdust. There can be no objection to making a usable molding sand from the old sand by crushing the only loosely sintered mass and adding the binding medium directly.

Högberg, Erik.
METHODS OF TAKING IMPRESSIONS FOR EXAMINATION OF POROUS SURFACES. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 60-10350

Trans. of Nordisk Betong (Sweden) 1959, v. 3, no. 2, p. 139-144.

A method of taking impressions is described which can be used to facilitate the study of the effect produced by air-entraining agents on the frost resistance of concrete. Very accurate impressions of brightly polished concrete or mortar surfaces can be taken by means of some impression compound which is employed in dental practice (e. g., Kerr Regular Permlastic. The air pores are reproduced on the impression in the form of small bubbles, which can readily be measured or photographed. Synoptic views of surface areas and enlargements of details are most conveniently made with the help of a special macrophotographic camera. By using synoptic views, it is easier to pick out those samples which should be examined more closely by means of a microscope. Enlargements of details can serve as illustrations, or can directly be employed for measurements, which are made by the aid of a magnifying glass or a graduated rule. The imprints of the air pores on the impression are easier to observe and to measure in microscopic examination than the actual air pores on the original surface. The impressions can be cut into thin sections so that the air bubbles may be examined in profile.

Spiess, C. F.
A NEW COLD-CHECK INSTRUMENT. 7 Dec 59, 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10514

Trans. of Farbe u[nd] Lack (West Germany) 1959, v. 65, no. 4, p. 184-185.

The development of an apparatus is announced which permits completely certain, uninterrupted testing of painted surfaces.

Stadlinger, Herman.
BLOOD ALBUMIN AND ITS IMPORTANCE IN TECHNOLOGY AND TRADE. [1959] 11p. 6 refs.
Order from SLA mi$2.40, ph$3.30 60-10142

Trans. of Kunstdünger und Leim (Germany) 1931, v. 28, no. 5, p. 205-213.

The preparation and testing of albumins recovered from slaughterhouse operations is described. Commercial applications of these products which are briefly discussed include gluing of plywood, glazing of leather, glazing of colored paper, cloth printing, and finishing of fabrics.

Stadlinger, H[ermann].
PRESERVATIVES FOR ADHESIVES. I-II. [1959] 8p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10212

Trans. of Farben-Chemiker (Germany) 1932, v. 3, p. 144-145 and 180-182.

Thomas, L.
STEEL FOR REINFORCED CONCRETE, I. [1959].
Order from BISI £4 15s BISITS 1435

Trans. of Tek[nisk] Uke[blad] (Norway) 1958 [v. 105] 20 Nov, p. 1011-1018.

Problems connected with the quality of steel used in reinforcing concrete are discussed from the metallurgical and mechanical standpoints. The first part deals with the structures of various types of steel, and outlines the properties of steel intended for reinforced concrete. (J. I. S. I. abstract)

Ceramics and Refractories

OGNEUPORY (USSR) 1959 [V. 24] NO. 7, P. 289-336 (Refractories). [1959] [16]p. SOV-131-59-7-(1-14)/14.
Order from OTS $0.50, $3.00/6 mo. PB 141 134T-19
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

STEKLO I KERAMIKA (USSR) 1959, [VOL. 16] NO. 8, P. 1-48 (Glass and Ceramics). [1959] [18]p. SOV-72-59-8-(1-17)/17.
Order from OTS $0.60, $3.50/6 mo. PB 141 068T-18
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Agte, C., Alterthum, H.
INVESTIGATIONS INTO THE SYSTEMS OF HIGH-MELTING CARBIDES AS A CONTRIBUTION TO THE PROBLEM OF THE FUSING OF CARBON. [1959] 9p. (18 figs omitted) 19 refs.
Order from SLA mi$1.80, ph$1.80 60-10305

Trans. of Zeit[schrift] f[ür] Tech[nische] Physik (Germany) 1930, v. 11, no. 6, p. 182-191.

The melting points of the individual carbides of zircon, niobium, molybdenum, hafnium, tantalum, and tungsten in argon were measured according to the drill hole method to avoid any decomposition, wherein tantalum carbide and hafnium carbide are the highest melting carbides with 4150 and 4160° abs. In binary and ternary mixtures of carbides, the course of the solidus curve is found to be a function of the composition. With regard to the roentgenographic and

metallographic investigations the formation of mixed crystals was found with a melting point minimum or maximum with all the systems, accordingly the mixtures, 4 TaC-1 ZrC and 4 TaC-1 HfC with 4205 and 4215° abs. have the highest melting point of all known solid bodies. In the investigation of the melting of carbon in crucibles of tantalum carbide it is observed that small particles of carbon evaporate, with the production of fused surfaces. From these and other observations it results that only the very pronounced evaporation of the carbon at its melting temperature prevents the formation of a carbon regulus on account of its consumption of energy. As a condition for the appearance of such a formation the following must be true: Melting in a tantalum carbide crucible under pressure. (Author)

Bahn, R. and Pump, K.
EXAMINATION OF A SIMPLE MEASURING PROCEDURE FOR THE DETERMINATION OF THE SPALLING RESISTANCE. [1959].
Order from BISI £ 2 15s BISITS 1483

Trans. of Silikat Technik (East Germany) 1959 [v. 10] Apr, p. 190-192.

Survey of work done up to date. Description of a method for the determination of the spalling resistance of ceramic materials by means of measuring the bending (transverse) strength as a function of temperature shock. Critical level of the spalling resistance. Influence of the shape of the test body on the measuring results. Test results on sintered corundum. (Author's summary)

Dubrovskiy, V. A., Andrega, P. N. and others.
THE INFLUENCE OF ACCELERANTS ON GLASS POLISHING. [1959] [5]p.
Order from LC or SLA mi$1.80, ph$1.80 60-10153

Trans. of Steklo i Keramika (USSR) 1955, v. 12, no. 12, p. 16-18.

Experiments indicate that the best crocuses, which assure the greatest removal of glass in the polishing process without accelerants, are slime crocus and crocus from pyrite cinders. The action of the accelerants is more pronounced when crocuses of small productivity are used than when high-productivity powders are used. Thus, in the presence of accelerants the intensity of the glass-polishing process with vitriol crocus increases 60 percent; with roller-type crocus 50 percent; soda crocus 60 percent; slime crocus only 17 percent. Crocus from pyrite cinders does not increase its polishing capacity at all when accelerants are used. No substantial difference was observed in the removal of glass with the various methods of supplying and applying various accelerants. The amount of accelerants introduced in the polishing process, independent of the method of their introduction, must be rigorously determined; an excessive quantity of accelerants can even lead to a slowing-down of the polishing. When the most favorable amount of accelerants is used, the polishing capacity of low-productivity crocuses is increased to that of the most effective crocusses, and thus the capacity of all iron crocuses becomes practically identical.

Haberland, U., Neubert, P., and Werner, M.
COMPARATIVE TESTS OF THE POLISHING ACTIONS OF METALLIC OXIDES. [1959] [10]p. (10 figs. 4 tables omitted).
Order from SLA mi$1.80, ph$1.80 60-10056

Trans. of Glastechn[ische] Ber[ichte] (Germany) 1936, v. 14, no. 2, p. 60-66.

Hanlein, W.
PRODUCTION OF THIN FLEXIBLE GLASS LAYERS BY VAPORIZATION OF GLASSES IN HIGH VACUUM. [1959] [9]p. (15 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10154

Trans. of Congrès International du Verre (no. 4). [Rapport] p. 1-5.

Holl, Arnulf.
RED URANIUM GLAZES FIRED AT 980 TO 1080 DEGREES. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10251

Trans. of Keramos (Germany) 1930, v. 9, no. 13, p. 5-6.

Kröner, G[erhard].
POLISHING MATERIALS FOR GLASS. 29 Aug 55, 9p. (9 figs. refs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10003

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1953, v. 26, no. 10, p. 300-306.

Lehmann, Hans, Schulze, Maria-Therissa, and Brandt, Arthur.
LEAD POISONING IN THE CERAMIC INDUSTRY. I-II. [1959] 15p. (3 figs. refs. omitted).
Order from SLA mi$2.40, ph$3.30 60-10202

Trans. of Deutsche Keramische Gesellschaft. Ber[ichte] (Germany) 1938, v. 19 [no. 2] p. 38-54.

Martinex, C[elia].
DEVITRIFICATION OF VITREOUS SILICA. Oct. 58, 17p. (3 refs. omitted) 4 refs.
Order from SLA mi$2.40, ph$3.30 60-10092

Trans. of [Centre National de la Recherche Scientifique, Paris]. Journal des Recherches (France) 1950, v. 3, no. 10, p. 101-106.

The devitrification of vitreous silica was facilitated by traces of oxides of alkaline metals and alkaline earths. Boric anhydride and phosphoric anhydride along with carbon did not exert much influence. Boric anhydride in particular could diminish the effect of other oxides like alumina. Phosphoric anhydride likewise retarded the action of alumina. B_2O_3 and P_2O_5 can therefore be incorporated in the silica to be fused in the silica glass industry. At high temperatures (1450° to 1650°C) and in the presence of traces of oxides commonly employed in industry, cristobalite constitutes the stable form of silica.

Minakov, A. G., Shchepanskiy, L. A. and others.
THE USE OF ZINC SULFATE TO ACCELERATE GLASS POLISHING. [1959] 11p. (2 figs. omitted) 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10155

Trans. of Steklo i Keramika (USSR) 1954 [v. 11] no. 8, p. 23-25.

Soyck, W.
CERAMIC DIELECTRICS. [1959] 12p. (9 figs. omitted) 10 refs.
Order from SLA mi$2.40, ph$3.30 59-20483

Trans. of Schweizer Archiv [fllr Angewante Wissenschafte und Technik] (Switzerland) 1936, v. 2 [no. 7] p. 159-166.

Zagorchik, M. M.
CONFERENCE ON SPEEDING UP OF GLASS GRINDING POLISHING PROCESSES. [1959] [12]p.
Order from LC or SLA mi$2.40, ph$3.30 60-10152

Trans. of Steklo i Keramika (USSR) 1954 [v. 11] no. 8, p. 3-5.

Topics are noted of papers that were read at the conference held in Leningrad in May 1954. The conference was sponsored by the Glavstroistekio MPSM SSSR and the All Union Scientific Technical Engineering Society of the silicate industry and the Institute of Silicate Chemistry of the USSR Academy of Sciences.

Fuels, Lubricants, and Hydraulic Fluids

Aronov, S. G. and Tyutyunnikov, Yu. B.
COKE PRODUCTION. HEATING COALS WITH HIGH-FREQUENCY CURRENTS (Koksovoye Proizvodstvo. Nagrev Ugley Tokami Vysokoy Chastoty). [1959] [26]p. 9 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-19321

Trans. of Stal (USSR) 1955, v. 15, p. 771-776.

In high-frequency electric field, the coal charge can be heated rapidly, uniformly, and simultaneously in bulk, at relatively low power consumption, only until onset of semicoke - coke conversion, since dielectric heating stops as soon as electrical conductivity begins (at about 450° to 500° C). The semicoke so produced is as strong as hot-process coke carbonized at 800°C. (Author)

THE TESTING OF LUBRICANTS. [1959] 13p. 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10210

Trans. of Montanistische Rundschau (Germany) 1931, v. 23, no. 2, p. 3-9.

Fouchécour, P. de and Reis, T.
PRELIMINARY NOTE ON THE USE OF THE ELECTRON MICROSCOPE FOR STUDYING LUBRICATING OILS. [1959] 6p. (8 figs. [1 table, refs.] omitted).
Order from SLA mi$1.80, ph$1.80 60-10344

Trans. of Rev[ue de l'] Inst[itut] Franç[ais du] Pétrole [et Annales des Combustibles Liquides (France) 1947, v. 2 [no. 6] p. 288-292.

Maassen, G[erd].
APPLICABILITY OF SULFUR-IMPREGNATED SINTERED IRON AS A BEARING MATERIAL.
12 May 53, 11p. (6 figs. 2 tables omitted) 7 refs.
Order from SLA mi$2.40, ph$3.30 60-10175

Trans. of Stahl und Eisen (West Germany) 1953 [v. 73, no. 4] p. 219-222.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-17041, 2 Mar 55 [14]p.

Information is presented on the limits of applicability of ordinary sintered iron as a bearing material; manufacturing of sulphur-soaked sintered iron; the wearing action of this material on steel; and its gliding properties as compared with other kinds of sintered iron. Report No. 18 of the Committee for Powder Metallurgy of the Society of German Metallurgists and of the Society of German Engineers, presented at the meeting of the Working Committee, on March 4, 1952.

Leather and Textiles

PROCESS FOR IMPROVEMENT OF POLYAMIDE MATERIALS. [1959] 9p.
Order from RIS $15.00 RIS rept. 54081

Trans. of German patent application B 41 403 (8k, 1/30) DAS 1 028 527, filed 16 Aug 56, pub. 24 Apr 58, by Boehme Fettchemie G. m. b. H., Düsseldorf.

A process is described for improving synthetically produced formed articles containing carboxamide groups. These articles are reacted with solutions or dispersions of alkylating cyclic acid esters or acid amides at temperatures under 100°C in the presence of, or before or after being treated with basic agents. The conversion is carried out with lactones, sultones, or caprolactam. The articles containing the carboxamide groups are treated with basic agents after alkylation.

PROCESS FOR IMPROVING THE MECHANICAL PROPERTIES OF ACRYLIC FIBERS. [1959] 8p. 2 refs.
Order from RIS $12.75 RIS rept. 54027

Trans. of German patent application F 9430 (29b, 3/65) filed 5 July 52, pub. 1 Dec 55, by Farbenfabriken Bayer A. G., Leverkusen.

A process is proposed for producing formed articles from polyacrylonitrile or acrylonitrile copolymers with improved mechanical properties, characterized in that high-molecular weight, linear or slightly cross-linked polyesters are added to the polymer solutions before these are formed.

PROCESS FOR PREPARING SPINNABLE, CRYSTALLINE POLYAMIDES. 30 Nov 59, 11p. 2 refs.
Order from RIS $21.50 RIS rept. 54079

Trans. of German patent application P 7009 (39c, 10) DAS 1 014 324, filed 28 Jan 52, pub. 22 Aug 57 (Priority: Switzerland, 30 Jan 51, 64 404) by Farbwerke Hoechst A. G., Frankfurt.

A process is described for producing spinnable, crystalline polyamides with particularly good coloring characteristics. The process is characterized in that polyamide forming components, particularly ω-aminocarboxylic acids with a chain having at least 5 carbon atoms between the functional groups or their polyamides, functional derivatives or salts of diamines and dicarboxylic acids with at least 4 carbon atoms between the functional groups are polycondensed in the presence of slight quantities of benzimidazole nucleus-containing compounds containing no more than two amide-forming groups, and in case benzimidazole compounds which are monofunctional with respect to the polyamide formation are present, their proportion preferably amounts to less than 0.01 mole relative to 1 gram-atom of amide nitrogen in the polymer. The nitrogen taking part in the amide formation in the compounds containing the benzimidazole compound which participate in the polyamide formation is present in an aliphatic bond. Polycondensation is carried out continuously over a 12- to 20-hour period.

Joerss, G.
SULFIDE STAINS AND DISCOLORATIONS ON WHITE HIDE, tr. by P. M. M. [1959] 7p. (2 illus. omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10147

Trans. of das Leder (West Germany) 1950, v. 1, p. 257-259.

The iron content of sodium sulfide which always represents only a small part of the iron found in the tanning pit, has no effect on the quality of the hides according to the experiments given, and especially is not responsible for the appearance of the well known sulfide discoloration. The experiments rather give confirmation to Schultz's opinion, according to which the condition of the rawhide is the determining factor for the appearance of sulfide discolorations. They also confirm his statements that sulfide discolorations may be reduced or prevented by preliminary treatment with alkali (white lime). The chemistry of sulfide discolorations has not been clarified. The direct or indirect participation of bacteria does not seem improbable. It is very desirable to subject this problem to a thorough scientific investigation. (Author)

Komatsu, Naoji, et. al.
STUDY OF SPINNING MECHANISM OF VISCOSE. I. INTERNAL STRUCTURE OF VISCOSE. [1959] 8p. 2 refs.
Order from SLA mi$1.80, ph$1.80 60-10149

Trans. of [Sen-i Gakkaishi] (Japan) 1959 [v. 15] July, p. 532-536.

In order to make a study of the internal structure of viscose as a basic problem in an explanation of the spinning mechanism of viscose the structural viscosity was measured while changing the quantity of carbon disulfide, degree of ripening, cellulose concentration or D. P., or the total alkali concentration. Because of the limited shear stress range of our experiments it was not possible to clarify the exact internal structure of viscose. Factors causing variations in characteristics of the high molecular electrolyte (amount of carbon disulfide, ripening, etc.) were found to be of secondary importance. The mutual intermolecular action in the dense solution was controlled by total alkali concentration and cellulose concentration and especially the cellulose D. P. determining the molecular chain distribution control in a large measure the internal viscose structure.

Kudryavtsev, G. I., and others.
HIGH SPEED FORMATION OF POLYAMIDE FIBERS. [1959] 6p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10266

Trans. of Tekstil'naya Promyshlennost' (USSR) 1958, v. 18, no. 2, p. 15-16.

A new method was investigated for the formation of kapron fiber. This method makes it possible to obtain fiber directly from the spinning machine with characteristics acceptable to the textile industry.

Morel, A. and Sisley, P.
AZO COMPOUNDS OF TYROSINE. [1959] 3p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10320

Trans. of Société Chimique de France. Bulletin, 1928, 4 ser. v. 43, p. 881-883.

Morel, A. and Sisley, P.
THE CONSTITUTION OF THE AZO-COMPOUNDS OF THE SILK FIBERS. [1959] 7p. (1 table omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10321

Trans. of Soc[iété] Chim[ique de France]. Bull[etin] 1927, 4 ser. v. 41, p. 1217-1224.

Natta, G[iulio].
A NEW ITALIAN ACHIEVEMENT IN THE TEXTILE FIELD: POLYPROPYLENE FIBER. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 60-10117

Trans. of unidentified Italian mono. 17 Apr 59.

The properties of the new fiber which are of value from the textile point of view are discussed. These

include the low density 0.90 to 0.92gm/cc, lower by 40% than that of cotton and by 30% than that of wool which signifies a considerable lightness and equal covering power and the possibility of having greater surfaces and volumes in spinning and weaving with the same weight which is also important from the economic point of view. The great lightness combined with high tenacity brings about the fact that polypropylene has the greatest self-sustaining length (about 70 km) among the textile fibers.

Nosov, M. P.
EFFECT OF REPEATED EXTENSION OF SYNTHETIC FIBERS ON THEIR RESIDUAL CYCLIC DEFORMATION AT BREAK. [1959] 15p. 14 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10148

Trans. of [Tekstil'naya Promyshlennost'] (USSR) 1959 [v. 19] no. 3(10) p. 45-53.

A dependency is established between residual cyclic deformation, the given cyclic deformation and toughness of the investigated yarns. An approximate method of determining the residual cyclic deformation ($\varepsilon_{r.c.}$) at break for small values of given cyclic deformation is established. This method consists of recording the $\varepsilon_{r.c.}$ in the course of such a number of cycles from the beginning of the experiment as will show the absence of additional $\varepsilon_{r.c.}$. This latter value is taken as the magnitude of $\varepsilon_{r.c.}$ at break. On repeated extensions with constant amplitude of the absolute given cyclic deformation there are no deformations such as would provide the work of a yarn completely in a resilient mechanism. Even at the very smallest given deformations the curve $\varepsilon_{r.c.} = f(\varepsilon_{g.c.})$ has an initial curved section.

Tsuruta, Motohiro, Koshimo, Akio, and Tagawa, Takashi.
THE RELATIONSHIP BETWEEN HEAT-SETTING AND SWELLING. Rept. 4 on Steam- and Heat-Setting of Nylon 6 Fibers. [1959] 12p. 4 refs.
Order from SLA mi$2.40, ph$3.30 60-10447

Trans. of Kobunshi Kagaku (Japan) 1959, v. 16, no. 170, p. 333-336.

In succession of the previous reports, we examined the swelling of different heat-set nylon 6 fibres in sulfuric acid solution. These results showed that steam-set fibre had good dyeing property, but was very difficult to swell compared with that with dry-heat-setting and without heat-setting. This tendency was very similar to increase of density described in the first report (Kobunshi Kagaku 16: 271, 1959) and it was found that the difficulty of swelling depended rather on crystal region than on amorphous region. (English abstract appended to original)

Photographic Materials

PROCESS FOR PROTECTING PHOTOGRAPHIC SURFACES. [23 Oct 59] 3p.
Order from RIS $5.50 RIS rept. 4741

Trans. of German patent application L 17 095 (57b, 17/05), by Ernst Leitz B. m. b. H., Wetzlar, filed 11 Nov 53, pub. 5 May 55.

The process is characterized in that a halogen compound of the elements of Groups II, III or IV of the periodic system, including the lanthanides, is vaporized onto the photographic layer after developing and fixing.

Grimoin-Sanson, Raoul.
DEVICE FOR PROJECTING ANIMATED PANORAMIC SCENES. 18 Aug 59, 2p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19215

Trans. of French patent 704 471, gr. 12, cl. 2, appl. 10 Jan 30, pub. 20 May 31.

The procedure set afoot by this device consists essentially in interposing in the path of luminous beams, both in taking and in projecting the pictures, a distorting reflector device, such that the image put onto the film is a distorted image of the original and that, at the time of projection the distorting reflecting system acts as light collector and distributor, in that it restores the image to its former shape, thus permitting us to project a realistic image onto the screen without recourse, as was necessary with former systems, to multiple projectors, and being preoccupied with synchronizing the latter. (Extracted from the report)

Kozlov, P. V.
USE OF POLYMERS IN THE PHOTOGRAPHIC EMULSION OF MOTION PICTURE MATERIALS AND PROCESSES OF THEIR CHEMICO-PHOTOGRAPHIC TREATMENT. Rept. no. 2 on Use of Polymers in Photography. [1959] 15p. 57 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10275

Trans. of Zhur[nal] Nauch[noy i] Prikład[noy] Fot[ografii i] Kinemat[ografii] (USSR) 1959, v. 5, no. 3, p. 161-171.

Nishino, Hisashi.
ON ACHROMATIC COATING FOR PHOTOGRAPHIC LENS. [1959] 12p. 7 refs.
Order from SLA mi$2.40, ph$3.30 60-10276

Trans. of [Oyô Butsuri] (Japan) 1958, v. 27, no. 10, p. 590-595.

The spectral characteristics of several glasses with achromatic coatings were measured. The achromatic coating increases the light transmittance, reduced the lens flare, and works as a filter to absorb ultraviolet, superior to a monolayer coating. Also the reproducibility of color is most effective when the achromatic coating is applied to a glass with low index.

Novikov, I. A.
STUDY OF THE EFFECT OF GOLD SALTS ON THE LATENT IMAGE AND FOG OF PHOTOGRAPHIC EMULSIONS. [1959] 8p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10274

Trans. of Zh[urnal] Nauch[noy i] Priklad[noy] Fot[ografii i] Kinemat[ografii] (USSR) 1959, v. 4, no. 3, p. 193-197.

The effect of gold on latent image is shown to be different from that on fog produced by sulfur sensitizers. A considerable difference was observed in the behavior of the latent image to gold in emulsions which had been previously subjected and in those not subjected to sulfide sensitization. An attempt was made to explain the relationship observed, starting from the assumption of the inability of gold centers to initiate the process of development without the presence of silver and of the different tendency to substitute by gold with centers formed by sulfide sensitization and those formed by light. (See also 59-15589)

Plastics

MOLDED SHAPES OF LOW SPECIFIC GRAVITY FROM POLYVINYL CHLORIDE OR ITS COPOLYMERS. [8 Oct 59] 6p.
Order from RIS $8.75 RIS rept. 5698

Trans. of [German] Patent application I 76927 IVc/39b and its supplement application by I. G. Farbenindustrie A. G., Frankfurt am Main, PB 25616.

The process is characterized in that this plastic material, in finely powdered form, is thoroughly mixed with an organic inflating agent. The mixture while compressed under high pressure, is heated to temperatures of about 160°C and above in closed molds. The masses are withdrawn from the mold in cooled state and are then inflated to the specific gravity desired at temperatures of approximately 100 to 120°C. A mixture of such organic azo compounds as decompose under heat by giving off nitrogen is used as inflating agent.

Davin, M[arcel].
THE PROBABILITY DISTRIBUTION OF THE STRENGTH OF A TEST PIECE AND THE INFLUENCE OF ITS DIMENSIONS, tr. by R. E. P. 11 Jan 54, 4p.
Order from SLA mi$1.80, ph$1.80 60-10189

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1953, v. 237, no. 16, p. 869-871.

Sprenger, Richard.
DEVELOPMENT AND PROPERTIES OF PLASTICS. [1959] 4p. 12 refs.
Order from SLA mi$1.80, ph$1.80 60-10211

Trans. of Kunst- und Pressstoffe (Germany) [1937] no. 1, p. 36-37.

Rubber and Elastomers

Heinz, G.
AN EXTRUDER FOR RUBBER MIXES. [1959] 16p.
Order from SLA mi$2.40, ph$3.30 60-10431

Trans. of Plaste und Kautschuk (Germany) 1958, v. 5, no. 11, p. 428-433.

Paetsch, Hildegard.
INVESTIGATION OF CARBON BLACK IN THE RUBBER INDUSTRY, tr. by F. Meller. 24 Nov 54, 14p. (figs. 5 photos. omitted) 4 refs.
Order from SLA mi$2.40, ph$3.30 60-10168

Trans. of Kautschuk und Gummi (Germany) 1948, v. 1, no. 9, p. 241-244.

Qualitative and quantitative chemical and physical procedures are described and evaluated.

Wood and Paper

METAL WOOD. [1959] 14p. 1 ref.
Order from SLA mi$2.40, ph$3.30 60-10221

Trans. of unidentified mono. including articles from Technische Rundschau, die Umschau, Kölnische Zeitung, der Maschinenmarkt, Neues Wiener Tagblatt and der Grafschafter.

Excerpts from journal articles (undated) are presented which describe the properties, nature, and make-up of the material, consisting of metal and wood, developed by the Kaiser Wilhelm Institut fur Eisenforschung, Dusseldorf.

MINIMUM STRENGTH OF KRAFT BAG PAPER, MACHINE FINISHED, BASIS WEIGHT 70/75 g/m^2, tr. by Erling Fladmark. Memorandum 11 and supplement. 15 Oct 59 [6]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10259

Trans. of unidentified mono. pub. Wiesbaden, n. d.

Specifications.

Brecht, W[alter] Räderer, P[aul] and Weitzel, W[olfgang].
TENDENCY OF PAPER TO CURLING. Aug 59, 10p. (16 figs. omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10128

Trans. of das Papier (West Germany) 1959, v. 13, no. 11/12, p. 237-244.

Within the framework of an investigation of the part played by exchange of moisture with the surrounding air as affecting several paper properties, experimental work was initiated concerning the tendency of papers to curl.

Forssblad, L. H.
A BLEACHING MODIFICATION FOR CELLULOSE PULPS, PARTICULARLY HARDWOOD SULPHITE PULPS. [1959] 6p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10079

Trans. of Swedish patent 166 418, cl. 55 c:1, pat. from 18 Dec 54, released 31 Dec 58, pub. 3 Mar 59, appl. 11672/1954, 18 Dec 54 (Priority sought (Finland) from 23 Dec 53) by MO och DOMSJO A. B., Ornskoldsvik.

A bleaching method is described which generally results in cellulose pulps with low contents of extractables and which, particularly for hardwood sulphite cellulose gives lower contents of extractables than has previously been achieveable using bleaching methods already described. The distinguishing characteristic of this invention is that the pulp, after having the preponderance of the lignin removed, in one or more stages using hypochlorite as a delignification agent, is subjected to treatment in an acid and reducing medium achieved by addition of sulphur dioxide for example, whereupon the purification step immediately following is a hot alkali treatment. Better results are obtained when the acid-reducing is something other than SO_2.

Gavelin, G.
A NEW CLAMP FOR TENSILE STRENGTH TESTERS. Oct 59, [1]p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10135

Trans. of Svensk Pappers-tidning (Sweden) 1959, v. 62, no. 6, p. 198.

Kirchhoff, H. and Friederich, H.
THE SIZE PRESS AND ITS POSSIBLE APPLICATIONS. [1959] [6]p.
Order from SLA mi$1.80, ph$1.80 60-10448

Trans. of Woch[en]bl[att für] Papierfabrik[ation] (West Germany) 1958, v. 86, no. 21, p. 917-919.

Matthis, A. R.
PROPERTIES, TESTING, AND APPLICATION OF PAPER IN ELECTRICAL INDUSTRY. [1959] 11p.
Order from SLA mi$2.40, ph$3.30 60-10292

Trans. of Chimie et Industrie (France) 1930, Mar, special no., p. 445-451.

MATHEMATICS

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA MATEMATICHESKAYA, 1959, V. 23, NO. 4, P. 489-770 (News of the Academy of Sciences of the USSR. Mathematics Series). [1959] [8]p. SOV-38-23-4-(1-8)/8.
Order from OTS $0.50, $3.00/6 mo. PB 141 031T-11
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

LENINGRAD U. VESTNIK (USSR) 1959, [VOL. 14] NO. 13, P. 5-148. SERIYA MATEMATIKI, MEKHANIKI I ASTRONOMII, NO. 3 (Herald of Leningrad University. Mathematics, Mechanics, and Astronomy Series). [1959] [14]p. SOV-43-59-13-(1-16)/16.
Order from OTS $0.60, $2.25/year PB 141 037T-7
Foreign $0.85, $3.25/year

Consists of abstracts in English.

MATEMATICHESKIY SBORNIK (USSR) 1959, V. 49, NO. 1, P. 3-132 (Mathematics Symposium). [1959] [5]p. SOV-39-49-1-(1-5)/5.
Order from OTS $0.50, $3.00/6 mo. PB 141 033T-23
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

USPEKHI MATEMATICHESKIKH NAUK (USSR) 1959, V. 14, NO. 2, P. 3-262 (Progress of Mathematical Sciences). [1959] [16]p. SOV-42-14-2-(1-19)/19.
Order from OTS $0.60, $3.50/year PB 141 036T-10
Foreign $0.85, $5.00/year

Consists of abstracts in English.

Muradyan, R. M.
ASYMPTOTIC FORMULAS FOR GENERALIZED LEGENDRE FUNCTIONS AND GEGENBAUER FUNCTIONS. [1959] 7p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20212

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115, no. 5, p. 887-890.

Asymptotic expressions for large values of l and fixed m are derived for the generalized Legendre functions $P_l^m(\cos\varphi)$, $Q_l^m(\cos\varphi)$, $P_l^m(\mathrm{ch}\,\varphi)$, and $Q_l^m(\mathrm{ch}\,\varphi)$, and for Gegenbauer's function $C_l^\nu(\cos\varphi)$ that is determined as a coefficient of h^ν in the expansion of $(1 - 2h\cos\varphi + h^2)^{-\nu}$ by increasing degrees of h for whole ν. In contrast to the corresponding asymptotic expansions introduced by E. W. Hobson (Theory of spherical and ellipsoid functions, p 293, Moscow, 1952), the present expressions are correct in the broad interval of change of φ. The greatest accuracy is obtained for values of φ that are near zero.

Computing Devices

BOGEY SYSTEM; CONSTRUCTION OF A CIRCULAR PROTRACTOR (?) FOR THE DETERMINATION OF THE EFFICIENCY. [1959] 3p. (1 illus. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10245

Trans. of Bureau d'Etudes, Paris. Rept. 902.

A circular protractor (sic: slide rule?) was constructed with a cross-ruled disk. The device was analogous to one described previously (Rept. 901 or technical translation 60-10247) for determining economic quantity. An evaluation of the device showed that its disadvantages outweighed its advantages.

DETERMINATION OF ECONOMIC QUANTITIES. [1959] [10]p. (1 diagr. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10247

Trans. of Bureau d'Etudes, Paris. Rept. 901, 1 Apr 30.

A practical method was sought for determining the number of individual units to manufacture at one time so that the cost price of the individual unit will be as low as possible. The use of a circular slide rule with a cross-ruled disk appeared to be faster and more practical than any of 3 graphic methods which were also considered. (See also 60-10245)

MECHANICS

Boguslavskiy, P. Ya.
ON CREEP DURING TORSION. [1959] 3p. 4 refs.
Order from MDF $2.00 MDF B-149

Trans. of A[kademiya] N[auk] SSSR. O[tdeleniye] T[ekhnicheskikh] N[auk]. Izv[estiya] 1956, no. 4, p. 151-152.

An approximate method is described to process experimental data on the creep of springs.

Jacquet, P. A.
TRANSGRANULAR DISCONTINUITIES AND PLASTIC DEFORMATIONS DUE TO MECHANICAL WORKING OF IRON AND STEEL SURFACES. 14 Sep 54, 21p. (25 figs. 1 table refs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10183

Trans. of Revue de Métallurgie (France) 1954 [v. 51, no. 6] p. 385-400.

A study was made of pure iron and of various steels whose surfaces have been mechanically worked by abrasion, milling, and truing up. An attempt was made to relate the micrography to the structural changes deduced from the x-ray diagrams and to certain observations relating to the surface state during the deformation of iron. Electrolytic dissolution, under the conditions of polishing in an acetic acid - perchloric acid bath, of very slight thicknesses (a minimum of 1 to 1.5μ, a maximum of 5 to 7μ) on the surface of pure iron and lightly alloyed C steels, previously subjected to a mechanical abrasion, milling or truing up, shows a general plastic deformation and some local microdiscontinuities. With pure iron, microhardness measurements confirm the localization of the microfissures in the regions of maximum deformation. Although generally an acid dissolution produces a preferential attack on the structures disturbed by mechanical work, several experimental verifications proved that the microdiscontinuities brought out by electrolytic polishings are the real discontinuities of the material, showing that the tensile strength has been exceeded locally by the surface mechanical action. These discontinuities are produced in the neighborhood of important tearing of the metal. The microfissures observed on the surfaces of steel mechanically finished by superfinishing and lapping do not appear to be comparable with the macroscopic rectification cracks which are principally produced on very hard steel that can scarcely be cold deformed. A polygon substructure was verified by micrography for nondistorted iron. The interpretation of the diagrams led to the envisioning of a process of abrasion consisting first of a division of the grains into rather disoriented units, accompanied by the plastic deformation of the latter, then a general crushing of the crystallites, the more deformed resisting better than those whose tensions are relaxed. The X-ray results agree with those obtained by Wilman et al. from the electron diffraction studies of the microstructure of abraded iron.

Lundberg, G.
ELASTIC CONTACT BETWEEN TWO SEMI-INFINITE BODIES. [1959] 23p. 6 refs.
Order from SLA mi$2.70, ph$4.80 60-10048

Trans. of Forschung auf dem Gebiete des Ingenieurwesens (Germany) 1939, v. 10, no. 5, p. 201-211.

A solution is given for the general problem of the half space with given surface stressing and the relationship between the pressure distribution and body form formation for a random pressure plane in a half space is determined. For a circular pressure plane the solution can be presented by means of Bessel functions. Constant compression along the rolls is assumed and the most favourable roll profile and the approximation are determined for contact between cylindrical rolls, for contact between two full cones, and for truncated cones of rotation. Rectangular or sectorial pressure planes are found. A theory concerning obliquely loaded rolls with parabolic or hyperbolic pressure planes, for which solutions are not possible on the basis of Hertz' theories, is derived from the basic equations of the half space. No account is taken of the influence of cutting by cylindrical or conical rolls outside the half space.

Kempf, G.
THE FRICTIONAL RESISTANCE OF SURFACES OF VARIOUS FORMS. [1959] [14]p. A. C. S. I. L. Trans. no. 1030.
Order from SLA mi$2.40, ph$3.30 60-10118

Trans. of International Congress for Applied Mechanics (no. 1) 1924. Proceedings, p. 439-448.

Oding, I. A. and Lepin, G. F.
DETERMINATION OF DEFORMATION CHARACTERISTICS FROM CREEP AND RELAXATION CURVES [Opredeleniye Kharakteristik Deformatsii

po Krivym Polzuchesti i Relaksatsii Napryazheniy]. [1959] 1700 words.
Order from HB $3.90 HB-4564

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 2-8.

General differential equation of deformation process developed on basis of dislocation theory of plastic flow in crystal aggregates. Resulting equations for deformation in various tests, specifically for decay of creep and for stress relaxation. Determination of deformation characteristics from creep and relaxation curves; simplicity and accuracy of proposed method. Simple procedure for deriving creep and relaxation curves from known deformation characteristics. Useful nomograms. Possibility of using creep test data for developing relaxation curves and vice versa. (HB abstract)

Tseytlin, V. Z.
THIRD PERIOD OF STRESS RELAXATION IN METALS. [1959] 1600 words.
Order from HB $3.90 HB-4741

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22, no. 7, p. 845-849.

Refutation of assumption that there is a third period of stress relaxation after 3000-4000 hours of testing when the rate of relaxation increases sharply and elastic deformation changes into plastic. Construction of over 100 relaxation curves based on work on boiler steels and literature data on pearlitic carbon and low alloy steels, Cr-Ni and Cr-Mn austenitic steels, and a 40% Fe, 20 Cr, 20 Ni, 20 Co alloy, rupture tested for up to 20,000 hours. (HB abstract)

Aerodynamics and Pneumatics

Bazzocchi, Ermanno.
BOUNDARY LAYER FLOW VISULIZATION TESTS IN THE LOW SPEED WIND TUNNEL (Prove di Visualizzazione del Flusso nello Strato Limite Alla Galleria del Vento a Bassa Velocita) tr. by S. Reiss. [1959] [34]p. N-65975.
Order from LC or SLA mi$3.00, ph$6.30 59-16777

Trans. of l'Aerotecnica (Italy) 1956, v. 36, no. 5, p. 315-332.

The visualization of the flow in the boundary layer can furnish valuable information on the course of the complex phenomena that determine the aerodynamic behavior of wings. The author describes a series of tests conducted in the wind tunnel on a sweptback wing and a wing without sweepback employing a mixture of kerosene and lampblack for the visualization. Furthermore, relations are brought out between the forms and the modifications of the flow in the boundary layer and the variation of the forces and moments on two different types of wings. (NASA abstract)

Gallo, J. le
NEW BAR ANALYZER FOR FORCES AND MOMENTS (Nouveau Barreau Analyseur de Forces et de Moments). [1959] [6]p. 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10351

Trans. of la Recherche Aeronautique (France) 1956, no. 49, Jan/Feb, p. 39-40.

Hydrodynamics, Hydraulics, and Hydrostatics

Metral, Albert and Weske, John R.
A PHENOMENON OF THE DEFLECTION OF FLUID STREAMS AND ITS APPLICATIONS (THE COANDA EFFECT) [AND] DISCUSSION. [1959] [25]p. (20 figs. omitted).
Order from SLA mi$2.70, ph$4.80 60-10051

Trans. of Int[ernationa]l Congr[ess for] Appl[ied] Mech[anics] (no. 5) Harvard U. and M. I. T., 12-16 Sep 38. Proc[eedings] p. 456-465.

Muller, Hans.
THE EFFECT OF CAVITATION ON THE OPERATION OF THE VOITH-SCHNEIDER PROPELLER (Einfluss des Hohlsogs auf das Arbeiten des Voith-Schneider-Propellers) tr. by F. A. Raven. June 58 [13]p. 11 refs. STS-285 D; Bureau of Ships Translation 655-D.
Order from LC or SLA mi$2.40, ph$3.30 59-16026

Trans. of Verein Deutscher Ingenieure. Zeitschrift (Germany) 1938, v. 82, no. 20, p. 566-568.

The design and method of measurement used in the cavitation testing unit for testing Voith-Schneider propellers in the Brunnenmuhle Research Institute of the J. M. Voith Corp., Heidenheim (Germany), are described and the manner of presenting the test data is reported. For the special case of the cavitation effect on the steering forces at large steering angles, experiments must be complemented by a mathematical estimation. (Author)

Schuster, S.
ON THE HYDRODYNAMICALLY DETERMINED THRUST AND TORQUE FLUCTUATIONS IN THE PROPELLING MACHINERY OF SHIPS (Uber die Hydrodynamisch Bedingten Schub- und Drehmoment-Schwankungen in Schiffsantriebs-Anlagen) tr. by E. N. Labouvie. Mar 59 [19]p. 7 refs. Trans. 275.
Order from LC or SLA mi$2.40, ph$3.30 59-14728

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (Germany) 1956, v. 98, no. 32, p. 1789-1794.

Periodic load variations to which ship propellers are subjected may cause the overloading of bearings and gears. By means of simplifying assumptions, it is possible to determine the characteristic time curve of these load fluctuations as a function of the most fundamental parameters and to deduce therefrom measures for the reduction of these fluctuations. (David Tyalor Model Basin abstract)

METALLURGY

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA: METALLURGIYA I TOPLIVO 1959, NO. 3, P. 3-192 (News of the Academy of Sciences of the USSR, Department of Technical Sciences, Metallurgy and Fuel). [1959] 1v. SOV-180-59-3-(1-43)/43.
Order from OTS $1.00, $5.50/6 mo. PB 141 019T-17
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

*FIZIKA METALLOV I METALLOVEDENIYE (USSR) 1959, V. 7, NO. 6, P. 801-945 (Physics of Metals and Metallography). [1959] 1v. SOV-126-7-6-(1-24)/24.
Order from OTS $0.80, $4.75/year PB 141 126T-11
Foreign $1.05, $6.25/year

Consists of abstracts in English.

Blanc, George and Volianik, Nicolas.
GRAPHITE SEPARATION BY GAS TREATMENT OF A CAST IRON MELT (Graphitausscheidung durch Gasbehandlung der Gusseisenschmelze). [1959] [62]p. 40 refs.
Order from SLA mi$3.90, ph$10.80 59-20990

Trans. of Giesserei (West Germany) 1957, v. 44 [no. 10] p. 277-290.

The advantages of the introduction of scavenging gases such as oxygen, nitrogen and air through a graphite tube are shown to include the decrease in the chill tendency of cast iron, removal of inclusions, and elimination of the cementite reformation.

Chizhikov, D. M., Frents, G. S. and Tratsevitskaya, B. Ya.
MECHANISM OF OXIDIZING COPPER SULFIDE BY OXYGEN. [1959] 12p. 9 refs.
Order from MDF $6.00 MDF C-115

Trans. of A[kademiya] N[auk] SSSR. Otd[eleniye] Tekh[nicheskikh] Nauk. Izvestiya, 1953, no. 4, p. 523-532.

Fogel', A. A.
MELTING OF LABORATORY SPECIMENS OF METALS IN VACUUM OR AN INERT GAS BY THE LEVITATION TECHNIQUE [Bestigel'naya Plavka Laboratornykh Obraztsov v Vakuume ili Atmosfere Inertnogo Gaza]. [1959] 3200 words.
Order from HB $6.80 HB-4702

Trans. of Akad[emiya] Nauk SSSR. O[tdeleniye] T[eckhnicheskikh] N[auk]. Izvestiya: T[ekhnicheskikh] Met[allurgiya] i Topl[ivo], 1959, no. 2, p. 24-34.

Description of a multipurpose laboratory apparatus for the induction heating, over a mold, or small rods compacted of metal powder or granules; for melting metals and alloys in a water-cooled copper crucible; and for levitation melting of metals in the electromagnetic field of an inductor. Melting in suspended state; boatlet inductor; device with turntable in action showing titanium ingots obtained. Design details on chamber for inert-gas melting and adsorptional two-chamber gas purifier; simplified scrubber design. Arrangement for melting of larger samples. Melting of samples weighing up to 100 grams in water-cooled crucibles; procedure. Melting of cylinder-shaped samples over a mold; design details of set-up. Overall view of first variant of melting installation. (HB abstract)

Geller, W[erner].
FUNDAMENTAL OBSERVATIONS ON THE DEGASSING OF MOLTEN METAL BATHS. 13 May 55, 20p. (5 figs. omitted) 4 refs.
Order from SLA mi$2.40, ph$3.30 59-20936

Trans. of Giesserei, Techn[ische]-Wissensch-[aftliche] Beihefte (West Germany) 1950, [no. 2] p. 57-63.

Girschig, R[obert].
SOME ASPECTS OF POWDER METALLURGY. 30 Dec 54, 17p. (8 figs. illus. omitted).
Order from SLA mi$2.40, ph$3.30 60-10181

Trans. of Revue de Métallurgie (France) 1954 [v. 51, no. 10] p. 665-673.

Glazunov, A.
REMOVAL OF THE LAST TRACES OF OXYGEN FROM STEEL WITH METALLIC SODIUM. [1959] 2p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 60-10290

Trans. of Chimie et Industrie (France) 1930, Mar, special no. p. 245-246.

Gumlich, E., Steinhaus, W. and others.
MATERIAL WITH A HIGH INITIAL PERMEABILITY. REPT. II. [1959] 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 60-10436

Trans. of Physikalisch-Technische Reichsanstalt. Wissenschaftliche Abhandlungen (Germany) 1930, v. 14, no. 1, p. 261-265.

A report is made on the magnetic and electrical properties of the reversible nickel-iron alloys with 5, 10 and 15% manganese, respectively. In addition to a technically desirable increase in resistance, the alloys show less dependence of the permeability on the thermal treatment. The different possibilities were studied for obtaining a comparatively high initial permeability with little interdependence between the permeability and the field strength. Two methods have been found for doing this; one depends on incomplete reduction in strength of properly cold-deformed

material, and the other upon the admixture of an alloying element which cannot be absorbed in solid solution, or which can be caused to separate out with the proper heat treatment. (Author)

Kaptyug, I. S. and Syshchikov, V. I.
EFFECT OF ALLOY CONTENT ON FRICTIONAL PROPERTIES OF TITANIUM [Vliyaniye Legirovaniya na Friktsionnyye Svoystva Titana] [1959] 1500 words.
Order from HB $4.85 HB-4568

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 22-27.

Study of unalloyed titanium and fourteen titanium alloys (Al, Mn, Si, Pb, Fe, Zr) for frictional properties. Compositions and mechanical properties. Static dry friction coefficients; tendency to seizure. Wear test results (Skoda-Savin sliding-friction machine). Microhardness and microstructures. Limitations to use, especially at high specific pressures.

Kemper, H.
CRITICAL DISCUSSION OF TEST METHOD FOR WELDED SEAMS. (CONTINUATION). [1959] 10p. (8 figs. omitted) 10 refs.
Order from SLA mi$1.80, ph$1.80 60-10203

Trans. of Autog[ene] Metallbearbeitung (Germany) 1930, v. 23, no. 14, p. 218-226.

Kiliani, Martin.
THE WORKING OF ORES BY MEANS OF ELECTRICITY. [1959] 5p. 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10205

Trans. of [Berg- und Hüttenmännische Monatschefte] (Austria) 1883, 1 June, p. 250-252.

Lyubimov, A. P., Granovskaya, A. A., and Berenshteyn, L. Ye.
A STUDY OF THE THERMODYNAMIC PROPERTIES OF BINARY IRON-MANGANESE SYSTEM IN THE SOLID STATE. [1959] [10]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10369

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1958, v. 32 [no. 7] p. 1591-1596.

The system iron-manganese was found to approach an ideal solution. Certain deviations from ideality which change the situation at low temperatures, decrease for higher temperatures and at the temperature 1447°K the system can be observed as ideal.

Mahoux, M. G.
INFLUENCE OF HIGH FREQUENCY OSCILLATIONS ON THE TREATMENT OF METALLURGICAL PRODUCTS, tr. by L. B. P. 23 Apr 53, 3p.
Order from SLA mi$1.80, ph$1.80 60-10170

Trans. of [Académie des Sciences, Paris]. Comptes Rendus (France) 1930 [v. 191] 22 Dec, p. 1328-1330.

Meunier, R. W.
THE GRUNEWALD PROCESS OF BRIGHT ANNEALING. [1959] 8p. (7 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10240

Trans. of Revue Universelle des Mines (France) 1931 [ser. 8] v. 5, no. 4, p. 102-106.

Moreau, Jean.
STUDY OF THE MECHANISM OF OXIDATION OF BINARY Fe-Cr ALLOYS AT ELEVATED TEMPERATURES, tr. by L. P. 30 Mar 53, 3p. 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10158

Trans. of [Académie des Sciences, Paris]. Comptes Rendus (France) 1953, v. 236, no. 1, p. 85-87.

A series of alloys containing 2.6, 7.5, 18, 23, and 30% Cr was subjected to temperatures of 800° to 1250°. X-ray diffraction and micrography showed (1) a biphase region (AB), in contact with the alloy, composed of granules of $FeCr_2O_4$ dispersed in a matrix of FeO, and (2) in intermediary monophase region (BC) having the cubic structure of spinels, the Cr content of which decreases from the bottom to the top, the upper section being pure Fe_3O_4. The variations in composition result from progressive substitution of Cr^{3+} ions with Fe^{3+} ions, and can be represented by the general formula $(Fe^{3+}_{(2-x)}Cr^{3+})O_4^{2-}$. The oxygen, diffusing across the crystalline networks of superficial oxides, reacts on the alloy at the metal-oxide interface (AA'). The alloy elements give rise to $FeCr_2O_4$ and to FeO arising from the excess iron. The chromite is collected in globules dispersed in FeO. A diffusion current of Fe is established across the network of FeO toward the upper part of the region AB. The Cr, bound under the form of $FeCr_2O_4$, cannot diffuse into this region. At a certain level (BB') the influence of O becomes sufficient to transform FeO to Fe_3O_4. The granules of $FeCr_2O_4$ become enclosed in a phase of isomorphous structure and are dissolved there, giving a spinel mixture. A study of the parameters of the spinels at different levels of the region BC shows that the Cr content of this solid solution decreases rapidly from the interface BB', and that practically no Cr is present in this median part because of the inequality of the diffusion rates of Fe and Cr in AB. When, as a consequence of prolonged oxidation, the film presents the predominant diffusion of iron, the region BC grows at the expense of the layer AB and the percentage of chrome increases.

Nemnonov, S. A. and Klyushin, V. V.
INVESTIGATION OF L_{III} ABSORPTION SPECTRA OF CERIUM IN CERIUM-ALUMINUM ALLOYS. [1959] 3p. 3 refs.
Order from MDF $2.00 MDF N-107

Trans. of *Fiz[ika] Met[allov] i Metall[ovedeniye] (USSR) 1958, v. 6, no. 5, p. 951-952.

Experimental results are described which indicate that the fundamental contribution to the formation of interatomic bonds in the intermetallics $CeAl_2$ and $CeAl_4$ from the cerium atoms is introduced by the 6s and 5d states.

Nicol, Albert and Domine-Berges, Marthe.
THE OBSERVATION OF THE PHENOMENON OF SINTERING THROUGH THE USE OF CHEVENARD'S DILATOMETER, tr. by R. P. 17 Aug 53 [3]p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 60-10157

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1953, v. 236, no. 10, p. 1021-1023.

A dilatometric study of tempered, granulated and pulverized blast furnace slag established that if the pressure used in the preparation of sample cylinders for analysis approaches 1000 kg/sq cm a considerable contraction, incompatible with the density variations usually observed in allotropic transformations, is shown. Previous experiences indicate that sintering took place and that similar phenomena can be produced by choosing materials whose sintering properties are known.

Osawa, Atomi and Murata, Takasi.
THE EQUILIBRIUM DIAGRAM OF THE IRON-ALUMINUM SYSTEM. [1959] [26]p. (2 photos 8 tables omitted) 2 refs.
Order from SLA mi$2.70, ph$4.80 60-10033

Trans. of [Nihon] Kinzoku Gakkai-Shi (Japan) 1941, v. 5, p. 259-271.

Fe-Al alloys containing 0 to 42% Al were studied by means of magnetic; dilatometric and microscopic and X-ray analysis. A corrected equilibrium diagram was proposed. In addition to the α_1-phase, the α_2, α_3 and α_4-phases were discovered and the mechanism of their formation was investigated.

Patterson, Wilhelm.
EFFECT OF GAS SCAVENGING ON THE MAGNESIUM CONSUMPTION DURING PRODUCTION OF CAST IRON CONTAINING SPHERICAL GRAPHITE. [1959] [52]p. 13 refs.
Order from SLA mi$3.60, ph$9.30 59-20991

Trans. of Giesserei (West Germany) 1957 [v. 44] no. 9, p. 216-227.

Topics discussed include (1) the mechanism of the scavenging gas effect, (2) scavenging gas treatment of cast iron melts, (3) minimization of the effect of interfering elements, (4) the scavenging technique, and (5) the theory of crystallization of spherical graphite.

Sachs, G.
ACCURATE METHOD FOR MEASURING RESIDUAL STRESS [AND] APPROXIMATE METHOD FOR MEASURING RESIDUAL STRESSES. [1959] 3p. (4 figs. omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 60-10230

Trans. of [Germany] mono. Praktische Metallkunde, Teil 2, Spanlose Formung [pts] 86-87, n.d.

Saito, Tunezo and Maruya, Kazuo.
ELIMINATION OF DISSOLVED NITROGEN IN IRON BY ALUMINUM. [1959] [19]p. (3 figs. omitted) 17 refs.
Order from SLA mi$2.40, ph$3.30 60-10349

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1953, v. 17 [no. 1] p. 28-32.

The elimination of nitrogen by aluminum from molten iron was studied by determining the contents of AlN nitrogen and dissolved atomic nitrogen separately with respects to molten Fe-Al alloys which sufficiently reacted with nitrogen gas at one atmosphere. There was no clear relation between the content of AlN nitrogen and that of aluminum in the sample, but dissolved nitrogen decreased at first and then increased gradually as the content of aluminum increased with a minimum nitrogen content at about 1 to 5 weight percent aluminum. Such a relation was clarified from the view point of statistical thermodynamics. When pure molten aluminum reacted with nitrogen gas at one atmosphere, AlN was formed and nitrogen did not dissolve in the quasilattice of molten aluminum as atomic solutes.

Schafmeister, P. and Ergang, R.
THE IRON NICKEL CHROMIUM EQUILIBRIUM DIAGRAM WITH SPECIAL REFERENCE TO THE BRITTLE COMPONENT WHICH OCCURS AFTER LONG HEAT TREATMENT. [1959] 9p. (18 figs. omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 60-10219

Trans. of Technische Mitteilungen Krupp. Forschungsberichte (Germany) 1939, v. 2, no. 2, p. 5-14.

The system Fe-Ni-Cr was completed by establishing the stability range of the brittle hard non-magnetic sigma phase by heat treatments up to 1000 hours at 650 and 800°. The alloys were tested metallographically, with X-rays and magnetically and the hardness was determined. The sigma component is formed almost exclusively from the ferrite. It corresponds to the FeCr compound in the binary system Fe-Cr and is able to dissolve about 10% of Ni. It does not occur above 33% Ni. In the two isothermal sections developed, four single phase areas (twice alpha, gamma and sigma) five two phase areas (twice alpha + sigma, twice gamma + alpha, once gamma + sigma) and two three phase areas (alpha + gamma + sigma) occur. The sigma phase again changes into ferrite upon heating to between 900 and 1000°. (Author)

[Scheuer, Ernst].
SEPARATION OF MECHANICALLY MIXED METALS. [1959] 3p.
Order from LC or SLA mi$1.80, ph$1.80 60-10224

Trans. of German patent 502, 833, pat. 25 Dec 28, by Metallgesellschaft A. G., Frankfurt a. M.

A method is given for separating mechanically mixed metals and alloys by placing the mixture in a liquid medium, whose specific gravity is intermediate between those of the particles to be separated and whose melting point is below that of the most easily

fused particles in question. The method is characterized by the fact that a salt fusion of the nitrates, nitrites, chlorides, flourides, sulfates, or sulfides, of sodium, potassium, calcium, barium, and lead are used as means of separation.

Siebel, Erich.
STATE OF SCIENTIFIC KNOWLEDGE IN HOT-FORMING AND FORGING. [1959] [25]p. 4 refs.
Order from SLA mi$2.70, ph$4.80 60-10185

Trans. of Stahl u[nd] Eisen (West Germany) 1956, v. 76, no. 7, p. 393-397 (German Association of Metallurgists. Rept. no. 13).

After a short description of the most important hot-forming processes, the mathematical interrelationships which are common to all processes are discussed. The application of formulas determined for the individual interrelationships are explained with special consideration of the material properties, temperature, rate of processing and degree of deformation. (Author's summary)

Spasskiy, A. G. and Klyagina, N. S.
ELIMINATION OF NONMETALLIC INCLUSIONS FROM METALS. [1959] 1900 words
Order from HB $4.80 HB-4714

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Tsvet[naya] Met[allurgiya] (USSR) 1959, no. 3, p. 118-122.

Various ways of removing nonmetallic inclusions from molten metals, with special reference to Al and Al alloys. Procedure for obtaining uniform distribution of fine alumina inclusions in aluminum melts. Methods of estimating degree of contamination and subsequent removal of inclusions. Short-comings of treatment with fluxes containing NaCl and KCl. Filtering of liquid metals through materials able to adsorb nonmetallic inclusions. Proper selection of (active) filter material; filtering experiments in vacuum and with access of air. Results. Promise of filtering liquid Al and Mg and their resp. alloys. (HB abstract)

Wellinger, K[arl] and Seufert, W[illi].
A STUDY OF THE TENSILE STRENGTH BEHAVIOR OF METALLIC MATERIALS AT LOW TEMPERATURES. Dissertation Technische Hochschule, Stuttgart, 1948. [1959] [13]p. (17 figs. refs. omitted).
Order from SLA mi$2.40, ph$3.30 60-10172

Trans. of Z[eitschrift] fur Metallkunde (West Germany) 1950, v. 41 [no. 10] p. 317-321.

The differential influence of cold on the stress deformation resistance of different metals could be determined by plotting flow curves taken from compression tests at room temperature and at -180°. On the one hand soft iron, non alloyed steels and magnesium (cubic body centered and hexagonal) showed the same behavior, which also gives an explanation for their cold brittleness. On the other hand, copper, lead and the austenitic steels (cubic face centered) show similar flow curves, which explains the tenacious behavior of these metals in the cold. The differential influence of the vibration strength of various metals which were determined in earlier investigations checks with the trial results. Tests in which predeformations at -183° were conducted by compression and stress, continued at room temperature and their flow curves observed showed that no permanent action of the low temperature deformation can be found in soft iron and non-alloyed steels, that therefore the effect of the cold is noticeable only in the elastic behavior. Aluminum and copper, however, after a similar pretreatment, show an increased strengthening, which only disappears during a further deformation at room temperature; the course of the flow curves show this. This retained strengthening effect agrees with the theory of strengthening by displacement. (Author's conclusions)

Zhigach, A. F. [Antonov, I. S. and others].
SURFACE IMPREGNATION OF STEEL WITH BORON FROM THE GAS PHASE [Poverkhnostnoye Nasyshcheniye Stali Borom iz Gazovoy Sredy]. [1959] 800 words.
Order from HB $2.75 HB-4572

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 45-47.

Study of vapor plating of steel with diborane for conditions ensuring quality coatings. Experimental procedure; set-up. Relation between boronizing temperature and case depth. Effect of ratio of diborane to hydrogen in gas mixture, and of gas flow-rate upon case depths. Series of microstructures obtained with different boronizing temperatures, gas mixtures and flowrates. Recommended boronizing practice. (HB abstract)

Ferrous Metals

CREEP TESTS WITH STEELS HAVING DIFFERENT PRE-TREATMENT. [1959] [19]p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-20586

Trans. of mono. Dauerstandversuche an Stählen mit Verschiedener Vorbehandlung, Stuttgart, n.d.

Most materials exist in a treated condition which gives it favorable properties for room temperature. Materials, which are to be used in other temperature ranges, should also be checked in these ranges. It should be noted that the favorable pre-treatment for 20° often differs from that which is more advantageous for the temperature under consideration. Particularly when using materials at temperature ranges at which no experience exists for the material under consideration it is necessary to determine whether it is possible to improve the strength properties of the material in the range in which it is to be used by means of a different pre-treatment. For this reason the series of tests to be described in what follows were performed with different steels at 500°. The purpose of these tests was to supply information concerning the influence of the pre-treatment upon deformation resistance and separation resistance in the presence of heat. An improvement in comparison to

the delivered condition could be obtained by annealing for practically all the investigated materials. (Author)

Allard, M[arc].
KILLED BESSEMER STEEL, tr. by R. E. P. 30 Oct 53, 8p.
Order from SLA mi$1.80, ph$1.80 60-10162

Trans. of Revue Universelle des Mines (France) 1953 v. 96 [ser. 9] v. 9, p. 563-567.

Baum, K.
WASTE GAS PROBLEM IN OXYGEN-STEEL PRODUCTION, ESPECIALLY THE LD PROCESS. [1959] 5500 words.
Order from HB $9.80 HB-4717

Trans. of Berg- und Hüttenm[ännische] Monatsh[efte] (Austria) 1959, v. 104, no. 2, p. 41-50.

Fumes particles wetted with droplets of liquid in Pease-Anthony venturi scrubber; general and specific performance data on this scrubber after 5 years of development work; specific advantages of 3 gas cleaning processes used at LD oxygen plants. (HB abstract)

Bennek, Hubert and Bandel, Gerhard.
INFLUENCE OF STRUCTURE AS A FUNCTION OF HEAT TREATMENT AND ALLOYING ON THE CREEP RESISTANCE OF STEEL, tr. by L. Phillips. 10 Jan 52, 12p. (17 figs. 7 tables omitted).
Order from SLA mi$2.40, ph$3.30 60-10169

Trans. of Stahl und Eisen (Germany) 1943 [v. 63, no. 38] p. 695-700. (Union of German Iron Manufacturers in NSBDT. Rept. no. 632, p. 684ff.)

Braynin, I. Ye. and Shapovalov, S. I.
POINTS OF FLAKE FORMATION IN HYPEREUTECTOID STEEL. [1959] 800 words.
Order from HB $2.25 HB-4763

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Metall[urgia] (USSR) 1959, no. 6, p. 81-82.

Lack of literature data on flakes in eutectoid and hypereutectoid steels. Study of two carbon tool steels containing 0.82% C and 1.18% C for exact sites of flake formation after loading specimens with hydrogen for 10 hours at 1200°C, cooling them to 650°C, water quenching and then holding them at room temperature for a week. Brittleness of structural components as an important factor in flake occurrence; type of flakes formed; reason why the 0.8% C steel requires a greater hydrogen content for flake formation than the 1.2% C steel. (HB abstract)

Collongues, R., Sifferlen, R. and Chaudron, G.
STUDY OF THE OXIDATION OF IRON OF HIGH PURITY AND THE MANNER OF DECOMPOSITION OF THE PROTOXIDE PHASE OF IRON (Étude de l'Oxydation du Fer de Haute Pureté et des Modes de Decomposition de la Phase Protoxyde de Fer). 1959 [24]p. 11 refs. NRL Trans. no. 714.
Order from OTS $0.75 59-21002

Trans. of Revue de Métallurgie (France) 1953 [v. 50] no. 10, p. 727-736.

Paper presented at the Autumn Metallurgical Sessions of the French Society of Metallurgy, October 23, 1952.

Driller, A.
THE DEVELOPMENT OF ARC STEELMAKING FURNACES AND OF ELECTRODE CONTROL MECHANISM. [1959].
Order from BISI £4 5s BISITS 1433

Trans. of ETZ Elektrotechn[ische] Z[eitschrift] (West Germany) 1956, Ausgabe ?, v. ?, 21 Feb, p. 41-47.

The growing demand for electric furnace steel is leading to the construction of new arc furnaces with a capacity of up to 120 tons and ratings up to 36,000 kVA. New automatic electrode control mechanisms have been developed, namely hydraulic, e.g. with plunger control mechanisms, and electromechanical with amplidyne generators and magnetic amplifiers. (Author's summary)

Gaidukov, M. G. and Sadovskiy, V. D.
EFFECT OF PLASTIC DEFORMATION ON THE FORMATION OF MARTENSITE. [1959] 2800 words.
Order from HB $5.90 HB-4180

Trans. of Metallov[edeniye i Termicheskaya] Obra[botka] Met[allov] (USSR) 1958, no. 4, p. 2-7.

Study of effect of steel composition on stability of austenite during plastic deformation. Compositions: 0.05-0.85% C, 0.25-5% Mn, 0.30-1.85% Cr, and 4.3-18.3% Ni. Experimental procedure. Resistance of variously alloyed austenite to martensite transformation during plastic deformation as function of martensite point and alloy content (Ni-Cr as against Ni-Mn steels). Effect of working on martensite transformation during cooling to subzero. Comparison between effect of external plastic deformation and that of internal distortionless (phase) strain hardening; how the latter was induced. Effect of austenite grain size on Ms point, especially with Cr-Ni steels. (HB abstract)

Hashimoto, H. A.
GAS FLOW IN THE TOP-BLOWN OXYGEN CONVERTER. [1959] 1100 words.
Order from HB $2.50 HB-4768

Trans. of Tetsu to Hagane (Japan) 1958, v. 44, no. 3, p. 222-223.

Simple model experiments on effect of gas flow in a top-blown oxygen converter of conventional design, with various intensities of the gas jet, various heights of lance tip above the bath, and various distances of lance from center axis of bath. Experimental procedure and results. (HB abstract)

Hempel, Max and Krug. Hermann.
ALTERNATE STRESS DIAGRAMS OF STEELS AT HIGHER TEMPERATURES. [1959] [24]p. (11 figs. omitted) 9 refs.
Order from SLA mi$2.70, ph$4.80 60-10174

Trans. of Archiv für das Eisenhüttenwesen (Germany) 1943, v. 16, no. 7 [p. 261-268]. (Verein Deutscher Eisenhüttenleute. Rept-612).

Three steels for high-temperature service (chrome-molybdenum, chrome and molybdenum steel) with differential static physical properties were subjected to alternate stresses (with simultaneous determinations of elongation at temperatures up to 500°) for the purpose of determining alternate stress diagrams. A hydraulic pulsator was used as testing machine, which permitted uncontrolled elongation of the test bar at constant external load. The elongations were recorded optically with a magnification of 200 to 400 times. The alternate stress tests were conducted according to the Woehler method at various intermediate stresses up to a maximum load cycle of 2 million for a test period of 50 hours. The Woehler method was not satisfactory at temperatures below 300° to 400° for the determination of fatigue strength due to inadmissibly high elongation of the material; for this reason the evaluation of the alternate stress tests was made according to an "elongation determination" method, which established maximum values for elongation rate and permanent elongation. In this manner two variable demarcations of the alternate stress diagrams are obtained for each steel. Limiting stress lines which were obtained by the elongation determination method cover the load range, in which the elongation rate or permanent deformation do not reach inadmissible values, while the Woehler method gives limiting stress of equal life spans. The testing of experimental steels led to three specific critical cases which showed basic differences in the form of the alternate stress diagrams. (Extracted from author's summary)

Hempel, Max and Ardelt, Friedrich.
BEHAVIOR OF STEEL UNDER CYCLIC CREEP TESTS AT 500°. [1959] [35]p. (27 figs. omitted) 19 refs.
Order from SLA mi$3.00, ph$6.30 60-10173

Trans. of Archiv für das Eisenhüttenwesen (Germany) 1939, v. 12, no. 11 [p. 553-564] (Verein Deutscher Eisenhüttenleute. Rept. no. 466).

Homma, M[asao] and Hashimoto, Y[asuhiko].
RESEARCH ON THE RELATION BETWEEN CAST IRON AND OXYGEN; THE EFFECT OF THE OXYGEN CONTENT IN CAST IRON AND ITS STRUCTURE. [1959] [19]p. (17 photos. omitted) 59 refs.
Order from SLA mi$2.40, ph$3.30 60-10348

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1952, v. 16 [no. 9] p. 486-492.

The change of structure in Fe-C, Fe-Si-C and commercial grey cast iron caused by a minute difference of the oxygen content, was studied with the purpose of regulating the oxygen content of each melt by covering it with an especially prepared flux. The flux used acted as an oxidizing or reducing agent for the melt. The alloy having a coarse flake graphite structure was used as a starting substance and its melt was subjected to the action of the flux. Similar cast iron structures are regularly obtainable by reducing or increasing the oxygen content of the flake graphite-cast iron melt.

Homma, M[asao] and Hashimoto, Y[asuhiko].
RESEARCH ON THE RELATION BETWEEN CAST IRON AND OXYGEN; SOME CONSIDERATIONS IN CONNECTION WITH THE STRUCTURAL CHANGES BY OXYGEN. [1959] [18]p. (1 fig. 8 photos. omitted) 43 refs.
Order from SLA mi$2.40, ph$3.30 60-10368

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1952, v. 16 [no. 10] p. 547-551.

Due to the chemical composition in the super-eutectic component, spheroidal kish graphite is formed by deoxidation. The effects of Mn on the granulation of graphite and on spheroidal graphite are discussed. The change in the relation between the oxygen content and the change in structure by a change in the cooling velocity is explained. Recent research on the effect of a decrease in the oxygen content was discussed. (See also 60-10032, 60-10348)

Kolgatin, N. N., Glikman, L. A., and Teodorovich, V. P.
RUPTURE TESTING OF TUBULAR SPECIMENS UNDER INTERNAL PRESSURE BY HYDROGEN AND AT HIGH TEMPERATURES [Metodika Dlitel'nykh Ispytaniy na Razryv Trubchatykh Obraztsov pod Vnutrennim Davleniyem Vodoroda pri Vysokikh Temperaturakh]. [1959] 1600 words.
Order from HB $3.90 HB-4671

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 9, p. [1098]-1101.

Scarcity of data on effect of reactive gases such as hydrogen, creating high internal pressures in metals on their high temperature behavior under tensile stress. Special apparatus developed by authors for testing comparatively large numbers of specimens simultaneously. Testing procedure. Results obtained on (a) 0.20% carbon steel; (b) Ti-stabilized 18% Cr, 9% Ni steel; and (c) 0.12% C, 1.5 Si, 1.7 Cr, 0.25 Mo, 0.3 V, 0.1 Ti steel in rupture tests of tubular specimens under internal hydrogen pressure at high temperatures. Possibility of predicting performance at high temperature of steel tubes under internal hydrogen pressure from rupture tests at ordinary temperature. Effect of nitrogen as gas compared with hydrogen. (HB abstract)

Lev, L. Ye.
NONUNIFORM DISTRIBUTION OF ELEMENTS IN WHITE CAST IRON. [1959] 700 words.
Order from HB $2.00 HB-4709

Trans. of Liteynoye Proizvodstvo (USSR) 1959, no. 5, p. 36.

Study of distribution of silicon, aluminum, nickel, chromium, and manganese both between the cementite

and ferrite and in the various microregions of white cast iron. Experimental procedure and results. Factor determining the rate of formation of the structure of white cast iron. (HB abstract)

Loshkarev, V. F.
MECHANISM OF FLAKE FORMATION IN STEEL. [1959] 2100 words.
Order from HB $4.75 HB-4764

Trans. of Stal' (USSR) 1956, v. 16, no. 8, p. 734-737.

Partly new arguments and calculations in support of "hydrogen-structural" theory to refute objections raised earlier by half a dozen critics. Extensive editorial comment in support of Loshkarev's critics. (HB abstract)

L'vov, G. K.
ACCELERATED RECRYSTALLIZATION OF LOW-CARBON STEEL [Skorostnaya Rekristallizatsiya Malouglerodistoy Stali]. [1959] 2100 words.
Order from HB $5.60 HB-4565

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 8-14.

Study of characteristics of transformations in cold-worked low-carbon steel during rapid recrystallization (i.e. process) annealing by induction heating. Procedure; steel used: 0.05-0.12% C rimmed. Effect of heating rate and temperature; effect of holding time. Corroboratory quench-aging studies. Conclusions- possible heating rates of 1000°C (1830°F)/second to temperatures near the critical; effects of subsequent holding for a few seconds on structure and mechanical properties, followed by rapid cooling. Importance of coordinating phase changes with rapid heating and cooling in industrial practice. (HB abstract)

Lyulicheva, N. N. and Pisareva, N. V.
EFFECT OF ROLLING AT SUB-ZERO TEMPERATURES ON MECHANICAL PROPERTIES OF AUSTENITIC STEELS [Vliyaniye Prokatki pri Nizkikh Temperaturakh na Mekhanicheskiye Svoystva Austenitnykh Staley]. [1959] 1100 words.
Order from HB $3.50 HB-4567

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 19-22.

Study of effect of rolling reductions (15-60%) on mechanical properties of 18-8 and 18-8 Ti steels, rolled and tested at 100°C (212°F), 20°C (68°F) and -183°C (-300°F). Tensile and yield strengths and elongations. Best strain hardening temperatures for components serving at sub-zero temperatures. Sub-zero working of austenitic steels in soft vs. strain-hardened state. Microstructure of steel rolled at room temperature and at -183°C. (HB abstract)

Moreau, L., Talbot, J., and Bourrat, J.
THE USE OF MICROANALYZERS IN THE DETERMINATION OF CARBON AND OXYGEN IN PURE IRON. [1959] 10p. (5 figs. 1 table omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 60-10165

Trans. of Revue de Métallurgie (France) 1953 [v. 50, no. 11] p. 775-780.

Nazarenko, G. T.
RELATION BETWEEN STRUCTURE OF STEEL AND ITS YIELD POINT ELONGATION [Svyaz' Mezhdu Strukturoy Stali i Ploshchadkoy Tekuchesti]. [1959] 2100 words.
Order from HB $5.60 HB-4569

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 27-33.

Investigation of carbon steels (nominal 0.20, 0.30, 0.50, 0.80, 1.2, and 1.7%C) and a 0.60-0.70%C, 0.90-1.2 Mn steel for occurrence of a discontinuous yield point elongation (in %, calculated from stress-strain curves). Determination of strain hardening rate beyond the yield point. Behavior of steels after quenching and tempering and after annealing. Yield point elongation as characteristic of any carbon steel and variable within wide limits by varying the structure through heat treatment. Minimum tempering temp. for yield point elongation to appear; effect of tempering, quenching, and annealing temperatures on it. Relationship between yield point elongation and strain hardening. (BH abstract)

Povolotskiy, D. Ya. and Morozov, A. N.
HYDROGEN CONTENT AND FLAKES IN HEAVY STEEL SECTIONS. [1959] 1800 words.
Order from HB $4.90 HB-4628

Trans. of Nauchn[nyye] Dokl[ady] Vyssh[ey] Shkoly. Metall[urgiya] (USSR) 1959, no. 1, p. 37-41.

Study of effect of heat treating conditions on hydrogen content of heavy steel sections, based on use of a new sampling technique that prevents the loss of hydrogen and, hence, incorrect analysis results [description of analysis procedure in Brutcher Translation #4131] regarding the distribution of hydrogen in ingots, rolled and forged stock. Data on hydrogen distribution pattern -horizontal and vertical- in 130 blooms and billets of thirty pearlitic, pearlitic-martensitic, and martensitic steels and effect of heat treating thereon. Suggested heat treatments for removing hydrogen in sufficient amounts to suppress the formation of flakes in the subsequent stages of working. Effect of duration of tempering at 660-700° C on amount of hydrogen eliminated from pearlitic and martensitic steels studied. Particulars on new heat treating practices for rolled and forged semi-products that consume less time and space. (HB abstract)

Rausch, H. and Meyer, K.
EFFECT OF PARTIAL REPLACEMENT OF COKE BY GAS AS A FUEL IN SINTERING MACHINES. [1959] 4900 words.
Order from HB $9.80 HB-4680

Trans. of Stahl und Eisen (West Germany) 1958, v. v. 78, no. 9, p. 600-606.

Nature of mixed-fuel heating of iron-ore sinter: replacement of part of the coke needed by hot gas produced in a burner hood over the sinter machine. Data

on maximum savings on coke and on actual savings on heat. View of plant using mixed fuel; comparative operating data from two plants with and without mixed fuel. Effect of temperature and duration of action of gas; possibility of controlling its temperature. Experimental sinter pan developed by authors; testing procedures used on resulting sinter. Data on sinter quality; mechanical properties; structure; mineral composition; reducibility; degree of oxidation with mixed fuel as against ordinary sintering. Effect of mixed fuel on sinter plant output. (HB abstract)

Rosegger, R.
TECHNICAL AND MECHANICAL PROPERTIES OF DIFFERENTLY DEOXIDIZED BASIC CONVERTER STEELS. [1959].
Order from BISI £6 BISITS 1470

Trans. of Berg- u[nd] Hütten[männische] Monatsh[efte] (Austria) 1958 [v. 103] Sep, p. 163-175.

The influence of the method of deoxidation with silicon, silicon plus aluminum and aluminum alone upon the purity and the mechanical properties of basic converter steels was examined. The results of cleanliness tests on ladle samples, blue brittleness samples and step-down hardening testpieces carried out on differently deoxidized test heats established the superiority of the deoxidation with higher aluminum additions. The results of mechanical tests such as tensile tests flattening tests, impact tests, tests on build up welds and cupping tests gave values for aluminum-killed basic converter steels with low inclusions, that could normally only be obtained with fine-grained open hearth steels. (Author's summary)

Scherer, R[obert], Riedrich, G[erhard] and Kessner, H[erbert].
THE EFFECT OF NITROGEN ON THE PROPERTIES OF AUSTENITIC AND AUSTENITIC-FERRITIC Cr-Ni STEELS, tr. by R. E. P. 10 June 54, 10p. (8 figs. 2 tables omitted).
Order from SLA mi$1. 80, ph$1. 80 60-10190

Trans. of Stahl und Eisen (Germany) 1942, v. 62 [no. 17] p. 347-352.

The 0. 2 limit of austenitic and austenitic-ferritic Cr-Ni steels is raised about 8 kg/sq mm by the addition of 0. 10 to 0. 12% N. However, this can only happen in austenitic-ferritic steels when the austenite fraction is over 30%. The other mechanical properties are not appreciably affected if the structure remains the same. According to the Cr content, 0. 15% N can replace 2 to 4% Ni and 0. 25% N can replace 2. 5 to 6% Ni. N stabilizes the austenite in Cr-Ni steels. It does not affect the tendency toward embrittlement after annealing at elevated temperatures. Austenitic and austenitic-ferritic steels containing about 0. 10% C, 21 to 25% Cr, 4 to 5. 5% Ni and 0. 20% N are suitable for rust- and acid-proof steels. As a heat-resistant material, an austenitic steel containing 0. 15% C, 22% Cr, 13% Ni, 1. 5% Si and 0. 20% N is recommended in place of the steel resistant up to 1200° with 0. 15% C, 25% Cr, 20% Ni and 2% Si. (Author)

Schmidt, M[ax] and Legat, H[ans].
HEAT-RESISTANT CHROMIUM-MANGANESE STEELS. 18 May 54, 16p. (32 figs. 6 tables footnotes omitted).
Order from SLA mi$2. 40, ph$3. 30 60-10182

Trans. of Archiv fur das Eisenhüttenwesen (Germany) 1937 [v. 10] no. 7, p. 297-306.

In order to determine the most favorable alloy range of Cr-Mn steels for heat-resistant materials, steels with < 20% C, up to 35% Mn and up to 30% Cr were investigated. The mechanical properties of the steels were determined by determining their Brinell hardness and notch impact strength at room temperature after they had been annealed at temperatures up to 850°, as well as by investigating their strength properties at temperatures up to 900°. From the structure of the steels after they had been chilled in water from 1100° and after annealing at 700° the stability range of the phases present in the structure in the iron corner of the Fe-Cr-Mn phase diagram was defined. The most favorable steel compositions for heat resistant steels were determined by scaling tests at temperatures up to 950°. (Author)

Schottky, Hermann and Hiltenkamp, Hugo.
PARTICIPATION OF NITROGEN IN THE AIR IN THE WEAR OF STEEL PARTS SLIDING ON EACH OTHER AND IN FATIGUE FRACTURES (Mitwirkung des Luftstickstoffs beim Dauerbruch). [1959] [9]p. 13 refs.
Order from SLA mi$1. 80, ph$1. 80 59-20577

Trans. from Stahl und Eisen (Germany) 1936, v. 56, no. 15.

Strong local rubbing of steel parts which cause roughness lead also to combination of nitrogen from the air with the steel. A nitrogen enrichment can be shown in damaged machine parts by metalographic analysis. From the crushed and nitrogen-embrittled surface, with alternating loading, cracks progress which can form the origin of fatigue fractures. (Author)

Shabanov, D. A.
BEHAVIOR OF NITROGEN IN THE MELTING OF IRON-BASE ALLOYS IN VACUUM ARC [AND INDUCTION] FURNACES. [1959] 1500 words.
Order from HB $3. 85 HB-4621

Trans. of Isv[estiya] V[ysshikh] U[chebnykh] Z[avadeniy]. Chern[aya] Metall[urgiya] (USSR) 1958, no. 11, p. 37-40.

Variation of nitrogen content during vacuum arc furnace remelting of iron-chromium and iron-silicon alloys and iron-manganese alloys as function of residual pressure in furnace chamber and the initial nitrogen content. Rates of nitrogen removal in vacuum arc furnace compared with vacuum induction furnace; dependence of rates on initial pressure in furnace chamber. (HB abstract)

Talbot, J., Albert, P. and others.
THE PREPARATION AND ANALYSIS OF PURE IRON SAMPLES, tr. by R. P. 9 Mar 54, 17p. (3 tables, 6 refs. omitted).
Order from SLA mi$2.40, ph$3.30 60-10164

Trans. of Revue de Métallurgie (France) 1953, v. 50, no. 12 [p. 817-828].

Talbot, J[ean], Beaulieu, C[hristian] de, and Chaudron, G[eorge].
THE POLYGONAL GRAIN GROWTH OF PURE IRON. 26 Aug 54, 2p. (2 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 60-10178

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1954, v. 238 [no. 22] p. 2162-2165.

Conditions were defined under which polygonal grain growth occurs in a very pure monocrystal. The phenomenon was studied by means of metallography and by the technique of A. Guinier and J. Tennevin (see technical translation 59-17909 of Acta Cryst. 2: 133, 1949) of Laue spots focused at a great distance. Radioactive tracers showed the following impurities, in parts per million, in the iron monocrystals: Mn 0.3, Ni 5, Cu 2, Co 1, and P 1. Other impurities, in ppm, included C 30, O 40, N 10, S 10, and As 1. Before treatment a given family of crystal planes had good crystalline perfection. After a 4% elongation there was a slight disorientation of the netted planes (331) and after annealing at 200° in pure hydrogen striation was observed on the Laue spot. This striation was accentuated by annealing at 300°, at 400°, and at 800°. The polygonal state of the iron did not change during annealing at 850° for several days.

Tavadze, F. N. and Ebanoidze, D. D.
EFFECT OF LITHIUM ON FORM OF GRAPHITE IN CAST IRON. [1959] 600 words.
Order from HB $2.25 HB-4762

Trans. of Liteynoye Proizv[odstvo] (USSR) 1959, no. 9, p. 38.

Study of change in shape of graphite particles in cast iron when diffusion-treated in the solid state with lithium. Cast iron compositions and how their graphite reacts to heat treatment in a closed container. Effect of increased sulfur content. Comparison between effect of magnesium and lithium upon form of graphite when heat treating cast iron. (HB abstract)

Trenkler, Herbert.
STEEL REFINING IN THE BLAST FURNACE WITH PURE OXYGEN (LD METHOD). [1959] 25p. (15 figs. 6 tables omitted) [Bibliography omitted].
Order from SLA mi$2.70, ph$4.80 60-10161

Trans. of Revue Universelle des Mines (France) 1953, v. 96, ser. 9, v. 9, no. 8, p. 644-657.

The method is described by which the combined Austrian Iron and Steelworkers Stock Company and the Alpine Mining Company have gone into the development of a pure oxygen refining method with the object of completely and quickly developing the process to the practical stage. The refining process with 98% pure oxygen runs with great stability in a basic converter so that the steel obtained has very low P, S, N_2 and O_2 and does not have to be deoxidized. The iron content and basicity of the slag are normal. There is a clear relationship between the steel bath and the slag, making possible a normal industrial melt in the 30-ton converters of the new Linz steelworks. A 14 to 21% charge, which corresponds somewhat to the circulating slag of a smelting works, confirms the excellent thermal efficiency of the process where 90% converter yield can be expected. Accordingly, the economy of the process is given universally by the charge site where one must use high pig iron charges. In working and capital costs the method has a great advantage over the SM process. The steel obtained is equal in all respects to the SM steel, and in a few respects surpasses it. Its very slight segregation, its pronounced cold workability especially for the unkilled steel are emphasized. Also, it is better with regard to rupture and corrosion resistance. The step from the test plant to normal industry with 20-ton converters has clearly been successful.

Vikström, E.
STEEL WITH HOLES. [1959] 16p.
Order from SLA mi$2.40, ph$3.30 60-10227

Trans. of unidentified Swedish mono.

Information is presented on the manufacture of steel tubes at the Sandviken plant.

Wever, F[ranz], Fischer, W[ilhelm] A[nton], and Engelbrecht, H[elmut].
EXPERIMENTS TO MELT PURE IRON IN A HIGH VACUUM, by R. E. P. 24 Dec 54, 14p. (3 figs. 2 tables omitted).
Order from SLA mi$2.40, ph$3.30 60-10167

Trans. of Stahl und Eisen (West Germany) 1954, v. 74 [no. 23] p. 1515-1521.

Pure iron was melted in a high-vacuum melting unit and was reduced with H_2. Soft iron prepared from Swedish pig iron was first used as the starting material, but was later replaced by electrolytic iron that only contained 0.10 to 0.14% O_2 after desulfurization in a limestone-fluorite crucible under CO and a Mn addition. At first the iron melt was reduced by H_2 blown over its surface and in five hours its O_2 content was reduced to about 0.004 or 0.005%. When these experiments were performed in Al_2O_3 crucibles the melts contained 0.0068 to 0.031% Al. The final O_2 content decreased with increasing H_2 pressure. In order to shorten the time of treatment the H_2 was introduced into the bottom of the iron melt through the porous crucible base. The O_2 content was reduced to 0.004 to 0.01 after 60 to 80 minutes at a vessel H_2 pressure of 100 torr. It was then attempted to reduce the melts with solid C, and the C was introduced by dipping C rods in the melt. The lowest O_2 content obtained was 0.004% and the corresponding C content was 0.005%. (Author)

Wittmoser, A.
THE CRYSTALLIZATION OF NODULAR CAST IRON. 4 Sep 53, 5p. (4 figs. omitted).
Order from SLA mi$1.80, ph$1.80 60-10176

Trans. of Revue de Metallurgie (France) 1953 [v. 50] no. 6, p. 424-426.

The present translation consists of the discussion which apparently followed a lecture by Mr. Wittmoser on the process of solidification of nodular cast iron. An explanation of the spheroidal growth of graphite in austenite is proposed.

Wyss, U.
THE INFLUENCE OF PRIMARY BAND SPACING AND THE AUSTENITIC GRAIN SIZE ON THE FORMATION OF THE FERRITE-PEARLITE BANDED STRUCTURE. [1959].
Order from BISI £2 15s BISITS 1379

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] 1956 [v. 22] Aug, p. 258-260.

Nonferrous (except light) Metals

TSVETNYYE METALLY (USSR) 1959 [V. 32] NO. 7, P. 1-95 (Nonferrous Metals). [1959] 1v. SOV-136-59-7-(1-20)/20.
Order from OTS $0.60, $3.50/6 mo. PB 141 139T-19
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Yermakov, V. S.
CYCLIC AGING OF HIGH-TEMPERATURE ALLOYS OF THE [NICKEL-BASE] EI437 TYPE [Tsiklicheskoye Stareniye Zharoprochnykh Splavov Tipa EI437]. [1959] 2100 words.
Order from HB $5.60 HB-4566

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 14-19.

Effect of thermocyclic aging on structure and various properties of nickel alloys approximately containing 0.10% C, max., 20% Cr, 2.4% Ti, and 0.7% V. Investigational procedure. Thermocyclic aging compared with ordinary aging with respect to obtainable surface and core hardnesses and rupture strength. Recommended applications of thermocyclic aging. (HB abstract)

Structural Metallurgy and Corrosion

Andreyeva, A. G. and Gurvich, L. Ya.
EFFECT OF NITRIDING ON THE CORROSION RESISTANCE OF STAINLESS STEELS [Vliyaniye Azotirovaniya na Korrozionnuyu Stoykost' Nerzhaveyushchikh Staley]. [1959] 2400 words.
Order from HB $5.75 HB-4570

Trans. of *Metallov[edeniye i] Term[icheskaya] Obra[botka] Met[allov] (USSR) 1959, no. 4, p. 34-40.

Development of a new nitriding practice for stainless steels, giving them the required case depth and hardness while leaving the corrosion resistance practically unimpaired. Compositions studied: 0.42% C, 13.75 Cr; 13.75 Cr, 12.6 Ni, 1.5 W, 0.5 Mo, 0.4 Si, 0.7 Mn; and 0.40% C, 13.5 Cr, 2.7 Ni, 2 W, 0.55 Si. Data on electrode potentials and their relation to variation in corrosion resistance of nitrided case with thickness of layer removed by grinding. Details on the four zones observed within depth of nitrided case and on the structural components present in them. Need for an allowance to be made for thickness of zones with high and reduced corrosion resistance when fabricating nitrided stainless steel after grinding and lapping. (HB abstract)

Bublik, A. I. and Pines, B. YA.
PHASE TRANSITION DURING A CHANGE IN THICKNESS IN FINE METALLIC FILMS. [1959] 7p. 9 refs.
Order from MDF $3.50 MDF B-145

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1952, v. 87, no. 2, p. 215-218.

An electron-diffraction investigation was made of the structure of fine films of Be, V, Cr, Ni and Co as a function of the thickness (in the 10^{-7} - 10^{-6} cm range).

Bühler, H. and Buchholtz, H.
ON THE EFFECT OF RESIDUAL STRESSES ON THE DYNAMIC STRENGTH (Über die Wirkung von Eigenspannungen auf die Schwingungskestigkeit). [1959] [18]p. 21 refs. Trans. no. 34.
Order from SLA mi$2.40, ph$3.30 59-20594

Trans. of Vereinigte Stahlwerke Aktiengesellschaft, Dortmund. Mitteilungen aus dem Forschungsinstitut (Germany) 1933, v. 3, no. 8, p. 235-248.

With practically uniform distribution of the alternating stresses over the cross section (e.g., in tension-compression tests on notch-free specimens) residual stresses are always to be regarded as a dangerous preliminary loading. With nonuniform distribution of the alternating stresses in the cross section, as the stresses generally are in bending and torsion and in tension loading of specimens having notches or holes, a residual stress condition may have various effects according to its distribution. All of the residual stresses which remain behind due to the quenching and tempering treatment have an increasing effect on the fatigue strength in bending and in torsion and presumably also on the tension fatigue strength of notched specimens, these stresses being characterized by compressive stresses at the boundary and tensile stresses in the core. The reason lies in the fact that the zero-to-compression strength is higher than the zero-to-tension strength and therefore exceeding the upsetting limit is generally allowable without danger. On the contrary, the fatigue strength in bending or

torsion is decreased by high tensile stresses at the boundary and compressive stresses in the core such as arise in machine tool steels by hardening throughout and also in cold drawing. Fatigue tests for different steels show that the alternating strength can be increased about 15 or 20% by high compressive stresses at the boundary (produced by quenching from a temperature below A_1) without changing the static strength properties. The practical effect of such preliminary compressive stresses on the alternating strength under various conditions, e.g. for notched specimens or for simultaneous corrosion, was not investigated. The bending fatigue strength was lowered about the same amount (about 15%) by high preliminary tensile stresses in the boundary zones. Slight preliminary tensile stresses (less than about 20 kg/mm^2), on the contrary, did not have a damaging effect on the fatigue strength as long as a material with sufficient toughness is used. During the alternating stressing, the residual stresses at hand before the test (tensile as well as compressive stresses in the boundary zones) became levelled-off by slight plastic deformations. In one case the preliminary tensile stresses, which were in themselves dangerous were reversed into favorable residual compressive stresses by the alternating stress without damaging the alternating strength. Measurable residual compressive stresses at the boundary can be produced by alternating loading below or even at the fatigue strength, by which the well known favorable effect of the so called "Trainieren" during alternating loading can at least partially be explained. (Author) (See also 59-14077, 59-20822)

Fuchs, S.
ON THE EFFECT OF LONGITUDINAL BORES ON THE RESIDUAL STRESSES OF HEAT TREATED STEEL CYLINDERS (Über den Einfluss von Längsbohrungen auf die Eigenepannungen wärmbehandelter Stahlzylinder). [1959] 13p. (27 figs. 10 tables, 10 plates, refs. omitted) Trans. no. 118.
Order from SLA mi$2.40, ph$3.30 59-20588

Trans. of Vereinigte Stahlwerke Aktiengesellschaft, Dortmund. Mitteilungen aus dem Forschungsinstitut (Germany) 1933, v. 3, no. 8, p. 199-234.

The local temperature differences that appear upon cooling of hollow cylinders are lowered through the longitudinal bores; hence the thermal stresses arising due to quenching from temperatures below A_1 decrease with increasing diameter of the longitudinal bore, in spite of a simultaneous increase of the cooling velocity. The stress condition arising due to accelerated cooling is characterized by compressive stresses at the edge of the bore and at the outer case as well as by tensile stresses in the intermediate zone. The favorable effect of the inner cooling on the distribution of thermal stresses is operative only with a certain minimum ratio of bore surface to total section. The stress measurements on hardened and on quenched and tempered hollow cylinders basically confirm the relations between the degree of through-hardening and the stress magnitude determined for solid cylinders. Thus, in hollow cylinders just as in solid cylinders, relatively high hardening stresses are produced through "case hardening", while low hardening stresses are produced by through hardening. In general the hardening stresses become lower with larger longitudinal bores, as did the thermal stresses; the stress distribution corresponds fundamentally to the stress curve of the thermal stresses. Since the degree of through-hardening is increased by the longitudinal bore, the region of "case hardening" is shifted to lower carbon contents. Therefore it is possible for hollow cylinders of steels with low hardenability (e.g. carbon steel with 0.3% C) to show the same hardening stresses as solid cylinders, when the hollow cylinders already exhibit case hardening, while the solid cylinders of that kind of steel still show a uniform texture in the cross section. This applies particularly for steels which as solid cylinders lie close to the lower limit of the case hardening region as regards their hardening stresses. In the region of higher hardenability, low hardening stresses follow with increasing bore and the resultant increasing through-hardening. Through tempering, the hardening stresses in hollow cylinders are lowered in fundamentally the same way as in solid cylinders. Hollow cylinders with complete through-hardening are practically free of stress after tempering at 300°. (Author)

Hansen, M.
THE STRUCTURE OF THE BINARY ALLOYS: EXCERPTS. [1946] [13]p. 91 refs. No. 71.
Order from SLA mi$2.40, ph$3.30 59-20271

Trans. of mono. Der Aufbau der Zweistofflegierungen, Berlin, 1936, p. 295-297, p. 327-331 and p. 444-450.

The excerpts are devoted to bismuth-cadmium, bismuth-antimony, and cadmium-antimony.

Kaesche, H.
TESTING CORROSION DANGER TO STEEL REINFORCEMENT DUE TO ADMIXTURES IN CONCRETE. [1959] 12p. 1 ref.
Order from SLA mi$2.40, ph$3.30 60-10243

Trans. of Zement-Kalk-Gips (West Germany) 1959, v. 12. no. 7, p. 289-294.

Under normal circumstances steel reinforcement in wet concrete is very well protected from corrosion by a thin film of oxide (passive layer). There are, however, chemical compounds, especially calcium chloride, which destroy the protective layer and which may give rise to serious corrosion of the reinforcement. In the case of prestressed concrete structures, in particular, care must be taken to ensure that no aggressive compounds are introduced by the use of unsuitable admixtures, inasmuch as the corrosion of prestressing wires may assume the dangerous form of stress corrosion. The existence of a stable passive layer around reinforcing bars can be demonstrated in the model test with the aid of the current-voltage curves for steel bars embedded in concrete cylinders and exposed to the action of lime milk. The method is quite suitable for testing the aggressiveness of admixtures of unknown composition. A testing procedure is described which has been developed for carrying out routine measurements of this kind. (Author's English summary)

Marwedel, Georg.
POSSIBILITIES AND LIMITATIONS OF CORROSION PROTECTION OF BRASS. 19 Nov 59, 17p. (2 figs. 3 tables omitted) 13 refs.
Order from SLA mi$2.40, ph$3.30 60-10110

Trans. of Farbe u[nd] Lack (West Germany) 1959, v. 65, no. 2, p. 64-71.

Rothfuchs, G.
COMPARISON OF SIEVE TESTS WITH THE USE OF VARIOUS SIEVES. [1959] 7p. (4 figs. 2 tables omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10293

Trans. of Bitumen (Germany) 1939, v. 9, no. 5, p. 88-92.

As shown on the basis of an example, a sieve line graph often affords the only possibility of comparing and evaluating the sieve results obtained with various types of sieves. Since, in such a graph, either only mesh width or hole diameter may be plotted, it is necessary to reduce first the hole width of round holes and mesh sieves to the same common denominator. In this way, the ratio determined by the author of hole width of round holes and mesh sieves can be used as a basis. (Author)

Schaub, Cyrill.
ORIGIN AND PROPAGATION OF BRITTLE FRACTURE, tr. by O. W. Leibiger. Sep 53 [20]p. TRB Trans. no. 1006.
Order from SLA mi$2.40, ph$3.30 60-10280

Trans. of Teknisk Tidskrift (Sweden) 1953 [v. 83, no. 15] p. 303-309.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

*ATOMNAYA ENERGIYA (USSR) 1959, V. 7, NO. 2, P. 101-200 (Atomic Energy). [1959] 1v. SOV-89-7-2-(1-24)/24.
Order from OTS $0.60, $3.50/6 mo. PB 141 082T-22
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Fomina, I. A.
EFFECT OF EMULSION TEMPERATURE ON THE PHOTOGRAPHIC ACTION OF ELECTRONS. [1959] 11p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10273

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1959, v. 4, no. 2, p. 94-99.

A preliminary investigation of the effect of the temperature of an emulsion on the mechanism of the photographic effect of electrons was made. It was determined that the region of the failure of the reciprocity law moved towards the lower intensities when the temperature was reduced, while the rate of the failure decreased at the same time. At -50°C the reciprocity law is fulfilled for all practical purposes within the entire region of intensities used. A decrease in the emulsion speed was determined when the temperature was reduced. The rate of the decrease depends upon the intensity of the electron beam. Relaxation time was evaluated for each temperature of the emulsion. An exponential dependence of the relaxation time upon temperature was determined. On the basis of the results obtained, the depth of the electron trap and the frequency of the thermal vibrations of the electron in the trap were evaluated. Values close to those which are characteristic for the photographic effect of light were obtained. All of the results obtained confirm the validity of the basic assumptions derived previously relative to the mechanism of the photographic action of the electrons. (Author)

Halban, Jr., H., Joliot, F. and others.
DEMONSTRATION OF A NUCLEAR CHAIN REACTION IN A URANIFEROUS MASS, tr. by J. C. Levy. 5 Jan 59, 7p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-12934

Trans. of Journal de Physique et le Radium (France) 1939, ser. 7, v. 10, no. 10, p. 428-429.

The experiments are described which give the number of neutrons produced in a moist sphere of uranium oxide 50 cm in diameter irradiated by a source of primary photoneutrons. The value of such number indicates that the neutrons produced are of secondary, tertiary, etc., origin, demonstrating in the system utilized the production of converging chain reactions.

Instruments and Installations

Baranov, P. S., Gol'danskiy, V. I., and Roganov, V. S.
HIGH ENERGY NEUTRON DOSIMETER. [1959] [8]p. 6 refs. A. C. S. I. L. Trans. no. 1074.
Order from SLA mi$1.80, ph$1.80 60-10129

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 6, p. 45-49.

A neutron detector with a threshold of 20.6 Mev based on the C^{12} (n, 2n) C^{11} reaction in liquid organic scintillators is described. The efficiency of the detector is almost independent of the neutron energy over the range from about 40 to 400 Mev. The detector can be used to measure a high energy neutron flux corresponding to a tolerance dose (20 cm^{-2} millicuries) with an accuracy of 6%. (Author).

Leboutet, H.
A THEORY ON THE LINEAR ELECTRON ACCELERATOR. [1959] 32p. 8 refs.
Order from LC or SLA mi$3.00, ph$6.30 AEC-tr-3704

Trans. of Annales de Radioélectricite (France) 1958, v. 13, no. 52, p. 107-129.

The conditions of interaction between a beam and a H. F. wave in a linear accelerator are very similar to those in a travelling wave tube, when the beam is not relativistic, and substantially different when it is, and there is no velocity modulation. The conditions of interaction are examined in both cases, and it is found in particular that a linear accelerator can be considered as a conventional generator possessing, for a given adjustment, an electro-motive force and an internal impedance which can be calculated. In application, calculations are made of the production of neutrons by a linear accelerator bombarding with electrons a uranium target. (Author)

PHYSICS

AKADEMIYA NAUK ARMYANSKOY SSR, YEREVAN. IZVESTIYA. SERIYA FIZIKO-MATEMATICHESKIKH NAUK, 1959, VOL. 12, NO. 3, P. 3-99 (News of the Academy of Sciences of the Armenian SSR. Physico-mathematical Series). [1959] [9]p. SOV-22-12-3-(1-9)/9.
Order from OTS $0.50, $3.00/6 mo. PB 141 017T-8
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA FIZICHESKAYA, 1959, V. 23, NO. 7, P. 782-932 (News of the Academy of Sciences of the USSR, Physics Series). [1959] 1v. SOV-48-23-7-(1-31)/31.
Order from OTS $0.80, $4.50/6 mo. PB 141 041T-19
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

*AKUSTICHESKIY ZHURNAL (USSR) 1959, V. 5, NO. 3, P. 263-388. (Journal of Acoustics). [1959] 1v. SOV-46-5-3-(1-32)/32.
Order from OTS $0.60, $2.25/year PB 141 039T-8
Foreign $0.85, $3.25/year

Consists of abstracts in English.

USPEKHI FIZICHESKIKH NAUK (USSR) 1959, V. 68, NO. 3, P. 369-562. (Progress of Physical Sciences). [1959] [15]p. SOV-53-68-3-(1-11)/11.
Order from OTS $0.50, $3.00/6 mo. PB 141 049T-20
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Friedel, W.
METAL MIRRORS FOR IMAGE DISSECTORS. [1959] 6p.
Order from SLA mi$1.80, ph$1.80 60-10195

Trans. of Fernsehen (Germany) 1931, v. 2, no. 1, p. 1-5.

Kazantsev, A. N.
ABSORPTION OF SHORT RADIO WAVES IN THE IONOSPHERE AND THE ELECTRIC FIELD TENSION AT THE PLACE OF RECEPTION. Appendix C-6. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 60-10099

Trans. of Akademiya Nauk, SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestia, 1947, no. 9, p. 1107-1136.

A lecture given at a meeting of the Branch of Technical Sciences of the Academy of Sciences of the USSR on March 19, 1947. For abstract see Sci. Abstr. 51B: 161, 1948.

Electricity and Magnetism

Abramson, I. S. and Fal'kova, O. B.
THE INCREASE IN STABILITY OF COMBUSTION OF AN ALTERNATING CURRENT ACTIVATED ARC IN SPARK SYSTEMS FOR PURPOSES OF SPECTRAL ANALYSIS. [1959] [11]p. (7 figs. omitted) 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 60-10028

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1949, v. 19 [no. 5] p. 611-615.

Burshteyn, E. L., Levin, M. L., and Polyak, Yu. V.
ON A NEW METHOD OF SOLVING ELECTROSTATIC PROBLEMS [AND] EDITORIAL COMMENTS, tr. by R. P. Illwitzer. [1959] [7]p. 2 refs. TG 230-T 113.
Order from LC or SLA mi$1.80, ph$1.80 60-13146

Trans. of *Radiotekhnika (USSR) 1959, v. 14, no. 3, p. 76-77.

A method for determining the distribution of electrical charge in plane, closed, line conductors, as previously proposed by L. A. Druzhkin (Radiotekhnika 13: no. 3, 1958), is shown to be without basis and his solution for an elliptical wire by this method is shown to be incorrect.

Deryagin, B. V., Krotova, N. A., and Karasev, V. V.
LETTER TO THE EDITOR CONCERNING THE ROLE OF ELECTRICAL PHENOMENA IN FILM ADHESION. [1959] [9]p. 11 refs. (1 fig. omitted).
Order from LC or SLA mi$1.80, ph$1.80 60-10036

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1954, v. 24 [no. 7] p. 1354-1357.

A priority (Doklady Akad. Nauk SSSR 61: 849, 1948; Uspekhi Fiz. Nauk 36: 387, 1948; and Chem. Abstr. 43: 2842c and 7769f, 1949) is claimed for the theory propounded by Skinner, Savage, and Rutzler (J. Appl. Phys. 24: 438, 1953) that the solidity of adhesion on the adhesion on a polymer-metal boundary is considerably conditioned by an electrostatic attraction of opposite charges of the double layer. Shortcomings of the paper by Skinner et al. are discussed. (See also 59-20133, 60-10163)

[Ellenbaas, W.].
PERMANENT MAGNETS. [1959] 9p. (8 figs. omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 60-10314

Trans. of Z[ei]ts[chrift] fur Tech[nische] Physik (Germany) 1933, v. 14 [no. 5] p. 191-197.

A formula for the field strength in the air gap of a permanent magnet is derived and discussed by replacing the demagnetization curve by an ellipse. The induced flux in the neutral zone of straight bar magnets is discussed from the same point of view. (Author)

Friemann, L. S.
THE APPROXIMATED THEORY OF THE MAGNETOSTRICTIVE GENERATORS (Die angenäherte Theorie des Magnetostriktiven Generators). [1946] [9]p. (7 figs. omitted) 15 refs. No. 149.
Order from SLA mi$1.80, ph$1.80 59-20029

Trans. of [Hochfrequenztechnik und Elektroakustik] (Germany) 1929, v. 33 [no. 6] p. 219-223.

On the basis of the equation of movement of a magnetostrictive bar carried out by Pierce, its electrical substitute wiring is indicated. The conditions for the auto-excitation of the magnetostrictive generator were also derived and graphic representations of its method of operation in the range of oscillation and in the range of tension were communicated. Finally the qualitative agreement with the result obtained earlier is shown. (Author)

Electronics

Brillouin, Leon.
THE ORIGIN OF THE RESISTANCE OF RADIATION. [1959] 22p. (4 figs. omitted) 1 ref.
Order from SLA mi$2.70, ph$4.80 60-10096

Trans. of Radioeléctricite (France) 1922, v. 3, [p. 147-152].

Brömel, Rudolf.
THE RADIATION CHARACTERISTICS OF SMALL PARABOLIC REFLECTORS FOR VARYING EXCITATION. PT. II. [1959] 20p. (9 figs. omitted) 9 refs.
Order from SLA mi$2.40, ph$3.30 60-10101

Trans. of Hochfrequenstechnik und Elektroakustik (Germany) 1936, v. 48, no. 4, p. 120-126.

Molecular Physics and Spectroscopy

OPTICS AND SPECTROSCOPY, 1959, VOL. 6, NO. 5, P. 373-468. [1959] 1v.
Order from OSA $25.00/year, Foreign $28.00/year

Trans. of Optika i Spektroskopiya (USSR) 1959, v. 6, no. 5, p. 573-[716].

*OPTIKA I SPEKTROSKOPIYA (USSR) 1959, V. 7, NO. 2, P. 137-284 (Optics and Spectroscopy). [1959] 1v. SOV-51-7-2-(1-34)/34.
Order from OTS $0.70, $4.00/6 mo. PB 141 047T-20
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Astoin, N., Vodar, B. and Romand, J.
ON THE SEPARATION OF SPECTRA OF DIFFERENT ORDERS OF A GRATING AT GRAZING INCIDENCE IN THE FAR ULTRAVIOLET (Sur la Séparation des Spectres d'Ordres Différents d'Un Réseau en Incidence Rasante dans l'Ultraviolet Lointain). 1959 [5]p. 5 refs. NRL Trans. no. 717.
Order from OTS $0.50 59-11952

Trans. of Journal de Physique et le Radium (France) 1955, v. 16, no. 6, p. 491-492.

See also 59-11954, 59-11955.

Astoin, Nicole and Vodar, B.
METHOD OF PHOTOGRAPHIC SPECTROPHOTOMETRY IN THE FAR ULTRAVIOLET (Méthode de Spectrophotomètrie Photographique dans l'Ultraviolet Lointain). 1959 [5]p. 10 refs. NRL Trans. no. 720.
Order from OTS $0.50 59-11955

Trans. of Journal de Physique et le Radium (France) 1953, v. 14, nos. 7-9, p. 494-495.

See also 59-11952, 59-11954

Astoin, Nichole and Vodar, B.
THIN TRANSPARENT FILMS IN THE FAR ULTRAVIOLET (Couches Minces Transparentes dans l'Ultraviolet Lointain). 1959 [4]p. 5 refs. NRL Trans. no. 719.
Order from OTS $0.50 59-11954

Trans. of Journal de Physique et le Radium (France) 1953, v. 14, no. 6, p. 424-425.

See alsp 59-11952, 59-11955.

Balloffet, Germaine and Romand, Jacques.
USE OF SLIDING SPARKS FOR SPECTRAL ANALYSIS IN THE FAR ULTRAVIOLET. POSSIBILITY OF DETECTION AND DETERMINATION OF SULFUR, PHOSPHORUS AND CARBON IN STEELS (Utilisation des Étincelles Glissantes pour l'Analyse Spectrale dans l'Ultraviolet Lointain. Possibilité de Détection et Dosage du Soufre, du Phosphore et du Carbone dans les Aciers). 1959 [4]p. 8 refs. NRL Trans. no. 716.
Order from OTS $0.50 59-11951

Trans. of Journal de Physique et le Radium (France) 1955, v. 16, no. 6, p. 490-491.

See also 59-11950.

Bydin, Yu. F.
MASS-SPECTROSCOPIC METHOD OF ANALYZING SMALL IMPURITIES. [1959] 14p. 17 refs.
Order from MDF $7.00 MDF B-146

Trans. of Uspekhi Khimii (USSR) 1957, v. 26, no. 8, p. 965-974.

Direct mass-spectroscopic methods and the method of isotope separation based on a combination of chemical and mass-spectroscopic methods are examined.

Kortüm, G.
PHOTO-ELECTRIC SPECTROPHOTOMETRY. [1959] 28p. 115 refs.
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3709

Trans. of Angew[andte] Chem[ie] (Germany) 1937, v. 50, p. 193-204.

Contents:
Subjective, photographic and photo-electric methods of measurement and their appropriate use
Development of the principle of measurement in photo-electric methods
Basis principles of measuring technique:
Spectral uniformity of the light; measurement of the absolute and relative extinctions
Photo-cells and their most important properties for spectrophotometric measurement
Measurement reduction in light
Amplification of the photo-current
Various forms of measuring devices and their uses

Romand, Jacques and Balloffet, Germaine.
VARIOUS PRACTICAL REALIZATIONS OF SLIDING SPARKS FOR SPECTROGRAPHY IN THE FAR ULTRAVIOLET (Différentes Réalisations pratiques d'etincelles Glissantes pour la Spectrographie dans l'Ultraviolet Lointain). 1959 [4]p. 6 refs. NRL Trans. no. 715.
Order from OTS $0.50 59-11950

Trans. of Journal de Physique et le Radium (France) 1955, v. 16, no. 6, p. 489-490.

See also 59-11951.

Solid State Physics

Bonch-Bruyevich, V. L.
ON THE THEORY OF IMPURITY BANDS. [1959] 10p. 19 refs.
Order from MDF $5.00 MDF B-148

Trans. of *Fiz[ika] Tverd[ogo] Tel[a] (USSR) 1959, v. 1, no. 8, p. 1213-1220.

Impurity states in a homopolar semiconductor with admixtures such as third and fifth group elements in germanium are considered. It is shown that the virtual transitions in the conduction band of the host lead to the formation of an impurity band for impurity concentrations of $\sim 10^{14}$ to 10^{15} cm^{-3} (Author)

Ebert, Ines and Teltow, J.
IONIC CONDUCTION AND DISORDER OF SILVER CHLORIDE WITH ADDITIONS (Zur Ionenleitung und Fehlordnung von Silberchlorid mit Zusätzen). [1958] [24]p. 17 refs. (includes foreign text)
Order from LC or SLA mi$2.70, ph$4.80 AEC-tr-3554

Trans. of Annalen der Physik (East Germany) 1955, v. 15, no. 6, p. 268-278.

The electric conductivity of AgCl with additions of CdCl2, PbCl2, CuCl and Ag2S is measured between 200° C and the melting point in the mixed crystal region. From the measurements are derived the defect concentrations and conclusions are drawn upon the interaction of the defects and the energy quantities. An anomaly of the conductivity of pure salt is discussed. (Author)

Pleskov, Yu. V.
ELECTROCHEMISTRY OF SEMICONDUCTORS. [1959] 11p. 20 refs.
Order from MDF $5.50 MDF P-139

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1958, v. 3, no. 3, p. 443-448.

A survey.

Prache, P. M.
ANOMALIES OF THE PERMEABILITY OF FERRITES AT HIGH FREQUENCIES. Oct 59, 33p. 18 refs.
Order from SLA mi$3.00, ph$6.30 60-10352

Trans. of Société Française des Électriciens. Bull-[etin] 1959, ser. 7, v. 11, no. 102, p. 1-12.

Complex permeability measurements of ferrites exhibit anomalies which are incompatible with the classical theory of the gyromagnetic effect. The resonance points determined at very high frequencies are attributed to spin waves, the existence of which is proved in a very elementary manner. The anomalies which occur at lower frequencies can be explained by considering the ferromagnetic medium as consisting of small magnets subjected to interaction.

Topchiyev, A. V., Geyderikh, M. A., and others.
THE POSSIBILITY OF PREPARING POLYMERIC MATERIALS WITH SEMI-CONDUCTING PROPERTIES FROM POLYACRYLONITRILE. 16 Nov 59 [9]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 60-10390

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 128 [no. 2] p. 312-315.

A study was made of the semiconducting properties of products of the thermal conversion of polyacrylonitrile, obtained by polymerization of acrylonitrile with organometallic catalysts (LiC_4H_9), at low temperatures (mol wt 10,000), with Li in liquid NH_3, by redox initiation (mol wt 100,000), and also of a polymer obtained by ionic polymerization with subsequent irradiation with a gamma-ray dose of 1.1×10^{22} ev. The thermal treatment was undergone by samples of polyacrylonitrile in both powder and fiber form. The samples obtained were studied by electronic paramagnetic resonance (EPR); for some fiber samples, the relationship between electrical conductivity and temperature was determined. All measurements of EPR spectra were carried out at room temperature. The semiconductors obtained showed electronic conductivity ($\Delta g < 0$). The concentration of current carriers was 10^{18} to 10^{19}, i.e., degeneration was small. The wave half-width of the EPR spectra, characterizing the relaxation time, was 10 to 20 gauss. No hyperfine structure was found in the EPR spectra; one relatively narrow line was observed, in agreement with Fletcher's results (Phys. Rev. 95: 844, 1954). The calculated width of the forbidden zone of polyacrylonitrile obtained by redox initiation and subjected to thermal conversion was 1.7 ev. This semiconductor can operate at a much higher temperature (there is not yet decomposition of the polymer at 300°) than germanium. The width of the forbidden zone indicates that the semiconducting properties are not connected with the carbonization of the polyacrylonitrile sample during thermal treatment, since the forbidden zone for graphite is extremely narrow. Thermally treated polyacrylonitrile decomposes H_2O_2. The specific conductivity of a sample impregnated with $CuCl_2$ increased sharply and had a value of 10^{-2} ohm^{-1} cm^{-1} at 300°.

Thermodynamics

Sirota, A. M. and Mal'tsev, B. K.
ON A GOLD-PLATINUM THERMOCOUPLE. [1959] 4p. 4 refs.
Order from MDF $2.00 MDF S-139

Trans. of *Izmer[itel'naya] Tekhn[ika] (USSR) 1959, no. 8, p. 27-28.

Sirota, A. M. and Belyakova, P. E.
ON THE CALORIC PROPERTIES OF WATER AT PRESSURES UP TO 500 kg/cm^2 AND TEMPERATURES UP TO 300° C. [1959] 6p. 18 refs.
Order from MDF $3.00 MDF S-138

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 10, p. 67-70.

New experimental data on the c_p of water are compared with results of measurements by other authors and with the results of calculating c_p according to p, v, T data. The enthalpy of water has been computed for pressures up to 500 kg/sq cm and temperatures to 300° C. (Author)

Vargaftik, N. B. and Oleshchuk, O. N.
EXPERIMENTAL INVESTIGATION OF THE HEAT CONDUCTION OF WATER. [1959] 7p. 17 refs.
Order from MDF $3.50 MDF V-138

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 10, p. 70-74.

Results are presented of measurements of the heat conduction of water in the 20° to 350° C range. A table is compiled of the values of the heat conduction of water in a broad temperature range. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AKADEMIYA NAUK SSSR. DOKLADY, 1959, (Reports of the Academy of Sciences of the USSR). [1959]
Order from OTS $1.40, $20.00/6 mo.
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V. 126, no. 4, p. 695-912, PB 141 015T-40
V. 127, no. 2, p. 239-480, PB 141 015T-42

Consists of abstracts in English.

AKADEMIYA NAUK URSR, KIEV. DOPOVIDI, 1959, NO. 6, P. 567-689 (Reports of the Academy of Sciences UKR SSR). [1959] 1v. SOV-21-59-6-(1-27)/27.
Order from OTS $0.60, $3.50/6 mo. PB 141 016T-16
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

CONFERENCE ON THE PROBLEM OF STATISTICAL CODING. [1959] 2p.
Order from MDF $1.50 MDF ABCON-2

Trans. of A[kademiya] N[auk] SSSR. [Otdeleniye Tekhnicheskikh Nauk] I[zvestiya]: E[nergetika] i A[vtomatika] 1959, no. 3, p. 191-192.

NAUKA I ZHIZN' (USSR) 1959, [V. 26] NO. 9, P. 1-80 (Science and Life). [1959] 1v. SOV-25-59-9-(1-49)/49.
Order from OTS $0.70, $4.00/6 mo. PB 141 020T-19
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

SCIENTIFIC INFORMATION REPT. 4 Dec 59, 90p.
Order from OTS $2.75, $28.00/year PB 131 891T-35

Consists of unevaluated information extracted from publications of USSR.

Goler, von and Pirani, M.
LUMINOUS TUBES AS STANDARD PHOTOGRAPHIC LIGHT SOURCES. [1959] 8p. (12 figs. omitted) 17 refs.
Order from SLA mi$1.80, ph$1.80 60-10313

Trans. of Z[ei]ts[chrift] f[ür] Tech[nische] Physik (Germany) 1931, v. 12, no. 3, p. 142-148.

The requirements are cited which are to be placed on photographic standard light sources. In the case of incandescent lamps, it should be noted that the relationships between the effect on the eye which is used for calibration, and the photographic effect is uncertain and changeable. On the other hand, gas discharge tubes (glow lamps) show a spectrum independent of the conditions of discharge within rather wide limits. In order to test the calibration of luminous tubes a series of photographs of a color chart on three different types of plates are produced by exposure with different tubes. It is recommended that a combination of three tubes (Cd, Hg, and Ne) be used as a standard light source, with which, in case the requirements of precision are great, the intensity ratio of the three tubes corresponding to the demands in practice, may be graduated, or that even the individual lines may be diminished or increased (in intensity) by the use of filters or reflecting colored surfaces. Tubes which omit only one or a few lines (Na, Hg, with green filters), or in which definite spectral ranges are favored (Ne, and Hg, without a filter), are suitable for investigating the color sensitivity of plates. (Author)

Kaltenecker, H.
HOW CAN THEORY HELP THE CONTROL ENGINEER? [1959].
Order from BISI £ 5 5s BISITS 1449

Trans. of [GWF; das] Gas- u[nd] Wasserfach (West Germany) 1959 [v. 100] 3 July, p. 681-687.

An attempt is made to translate the concepts and equations of theoretical control processes into practical and descriptive terms. The transfer function, frequency response and stability are considered in this way and the practical application of these concepts, statistical methods, and the use of the analogue computer are outlined. (J. I. S. I. abstract)

SOCIAL SCIENCES

Documentation

Gey, Karl F[riedrich] Kalbe, Hans and others.
DOCUMENTATION OF PHYSIOLOGICAL-CHEMICAL LITERATURE ON PUNCHED CARDS, tr. by P. M. M. 28 Jan 57, 9p. (footnotes [figs.] omitted).
Order from SLA mi$1.80, ph$1.80 59-20753

Trans. of Hoppe-Seyler's Z[eit]schr[ift] f[ür] Physiol[ogische] Chemie (Germany) 1955, v. 301 [no. 1/2] p. 70-77.

A direct code for physiological-chemical subject indexes is presented which was chosen on the basis of the following considerations: (1) for the combination of chemical and biological subjects proposed, only a limited number of holes are available in each case; (2) biochemical publications frequently contain several different types of subjects which should be recorded on one card to make the best use of the edge notched punched card; (3) if an indirect code is used (according to decimal classification or other number or letter codes) it is often possible to record only a small number of subjects, at least a smaller number than required on one card; and (4) a greater specificity which in many cases is not required with indirect coding, necessitates a greater expenditure of work in indexing, punching holes and sorting, i.e., in preparing several cards for one publication, a substantially larger number of perforations, and the use of a sorting device for the selection is required.

Scheele, Martin.
THE CORDONNIER METHOD, tr. by P. M. M.
21 Oct 58, 5p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 60-10114

Trans. of mono. die Lochkartenverfahrung in Forschung und Dokumentation mit Besonderer Berücksichtigung der Biologie, Stuttgart, 1954, Chapt. A, p. 6-10.

BOOK REVIEWS

The following book reviews can be ordered by number from LC or SLA. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/2078
Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki
AVTOMATIKA I TELEMEKHANIKA; SBORNIK (Automation and Telemechanics; Collection of Articles) Moscow, 1958. 144 p. 5,000 copies printed. 6p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2126
Linnik, Yuriy Vladimirovich
METOD NAIMEN'SHIKH KVADRATOV I OSNOVY MATEMATIKO-STATISTICHESKOY TEORII OBRABOTKI NABLYUDENIY (Method of Least Squares and Principles of the Mathematical and Statistical Theory of Processing Observation Data) Moscow, Fizmatgiz, 1958. 333 p. 6,000 copies printed. 5p. Microfilm $1.80, Photocopy $1.80

BR-CZECH/2218
Rihanek, Ladislav V., and Josef Postranecky
BOURKY A OCHRANA PRED BLESKEM (Thunderstroms and Protection From Lightning) Praha, Nakladatelstvi Ceskoslovenske akademie ved. 7p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2345
Galanin, Aleksey Dmitriyevich
Teoriya yadernykh reaktorov na teplovykh neytronakh (Theory of Thermal Reactors) Moscow, Atmoizdat, 1959. 382 p. Errata slip inserted. 6,000 copies printed. 8p. Microfilm $1.80 Photocopy $1.80

BR-CZECH/2369
Ceskoslovenska Akademie Ved. Sekce technicka
PROUDENI V LOPATKOVYCH STROJICH (Flow Through Turbomachinery) Praha, Nakladatelstvi Ceskoslovanske Akademie Ved, 1958. 413 p. (Series: Its: Sbornik ustavu pro vyzkum stroju) Errata slip inserted. 1,250 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2400
Shamshev, F. A., N. P. Knyupfer, N. I. Nikolayev, S. N. Tarakanov, and Ye. A. Sal'ye
RAZVEDOCHNOYE BURENIYE (Exploratory Drilling) Moscow, Gosgeoltekhizdat, 1958. 485 p. Errata slip inserted. 20,000 copies printed. 6p. Microfilm $1.80 Photocopy $1.80

BR-CZECH/2418
Agte, Curt, and Jiri Vacek
NEJNOVEJSI TECHNICKE SMERY V PRASKOVE METALURGII (Modern Engineering Trends in Powder Metallurgy) Praha, Statni Nakladatelstovi Technicke Literatury, 1955. 101 p. 1,200 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2420
Sergeychuk, Konstantin Yakovlevich
TEKHNICHESKIY PROGRESS SREDSTV SVYAZI V SEMILETKE (Technical Progress in Communication Facilities in the Seven-Year Plan) Moscow, Izd-vo "Znaniye," 1959. 30 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1959, no. 15) 58,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-CZECH/2431
Bednarik, Josef, and Josef Danek
OBRAZOVE ZESILOVACE PRO TELEVISI A MERICI TECHNIKU (Video Amplifiers for Television and Measuring Technique) Praha, SNTL, 1957. 290 p. Errata slip inserted. 3,350 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2454
Vlaznev, Yevgeniy Ivanovich, Sergey Vasil'yevich Podgornov, Valeriy Mikhaylovich Chernyshev, and Petr Gavrilovich Shalashov
NORMALIZOVANNYYE STANOCHNYYE PRISPOSOBLENIYA; SPRAVOCHNIK KONSTRUKTORA (Standard Machine Tool Fixtures; Designer's Manual) Moscow, Oborongiz, 1959. 439 p. 12,000 copies printed. 7p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2469
Nikitin, Sergey Nikolyaevich
OSNOVY GIDROENERGETICHESKIKH RASCHETOV (Fundamentals in Water Power Calculations) Moscow, Gosenergoizdat, 1959. 510 p. 2,500 copies printed. 8p. Microfilm $1.80 Photocopy $1.80

BR-POL/2478
Czerski, Lucjan
CHEMIA DLA TECHNIKOW (Chemistry for Technologists and Engineers) Warszawa, Panstwowe Wydawnictwo Naukowe, 1958. 430 p. 5,200 copies printed. No additional contributers mentioned. 13p. Microfilm $2.40 Photocopy $3.30

BR-SOV/2500
Dergachev, Aleksandr Fedorovich
ORGANIZATSIYA I PLANIROVANIYE PREDPRIYATIY PO REMONTU AVTOMOBILEY I DOROZHNYKH MASHIN (Organization and Planning of Automobile and Road Machinery Repair Shops) Moscow, Avtotransizdat, 1958. 303 p. Errata slip inserted. 3,500 copies printed. 5p. Microfilm $1.80 Photocopy $1.80

BR-POL/2510
KALENDARZYK ELEKTROTECHNICZNY (Handbook of Electrical Engineering) 10th ed., rev. and enl. Warsaw, PWN, 1959. 1348 p. 19,819 copies printed. 6p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2537
Nazarov, Armenak Gevorkovich
METOD INZHENERNOGO ANALIZA SEYSMICHESKIKH SIL (Engineering Analysis of Seismic Forces) 2d ed., rev. and enl. Yerevan, Izd-vo AN Armyanskoy SSR, 1959. 285 p. Errata slip inserted. 3,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2543
Akademiya nauk SSSR. Laboratoriya dvigateley
TEORIYA, KONSTRUKTSIYA, RASCHET I ISPYTANIYE DVIGATELEY VNUTRENNEGO SGORANIYA (Theory, Design, Calculation, and Testing of Internal Combustion Motors) Moscow, Izd-vo AN SSSR, 1958. 174 p. (Series: Its: Trudy, vyp. 4) Errata slip inserted. 3,000 copies printed. 6p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2546
Moscow. Gosudarstvennyy okeanograficheskiy institut
TRUDY, VYP. 42 (Transactions of the State Institute of Oceanography, Nr 42) Moscow, Gidrometeoizdat, 1958. Errata slip inserted. 850 copies printed. 1p. Microfilm $1.80 Photocopy $1.80

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Laskowski, Tadeusz
WZBOGACANIE KOPALIN W CIECZACH CIEZKICH (Mineral Dressing in Heavy Media) Katowice, WGH, 1958. 255 p. 821 copies printed. 5p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2553
Maramzin, Aleksandr Vasil'yevich
BURENIYE SKVAZHIN V USLOVIYAKH KRAYNEGO SEVERA; V MNOGOLETNEY MERZLOTE. (Oil Well Drilling in the Far North; Under Permafrost Conditions) Leningrad, Gostoptekhizdat, 1959. 209 p. Errata slip inserted. 2,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2554
Akademiya nauk SSR. Otdeleniye khimicheskikh nauk. Komissiya po khromatografii
ISSLEDOVANIYA V OBLASTI IONOOBMENNOY, RASPREDELITEL'NOY I OSADOCHNOY KROMATOGRAFII (Studies in the Field of Ion Exchange, Distribution and Precipitation Chromatography) Moscow, Izd-vo AN SSSR, 1959. 150 p. Errata slip inserted. 3,500 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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CONFERENCE ON INFORMATION THEORY, STATISTICAL DECISION FUNCTIONS, RANDOM PROCESSES. 1st, Liblice, 1956. Transactions. Prague, Czechoslovak Academy of Sciences, 1957. 354 p. 1,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov
TRUDY, TOM 18, VYP. 72 (Transaction of the Institute of Mechanical Engineering, USSR Academy of Sciences. Seminar on the Theory of Machines and Mechanisms, Vol. 18, Nr 72) Moscow, Izd-vo AN SSSR, 1959. 44 p. Errata slip inserted. 2,200 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Akademiya nauk SSSR. Institut mashinovedeniya
PROBLEMY PROCHNOSTI V MASHINOSTROYENII, VYP. 1 (Problems of Strength in Machinery Construction, Nr. 1) Moscow, Izd-vo AN SSSR, 1958. 105 p. 3,000 copies printed. 2p Microfilm $1.80 Photocopy $1.80

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Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov
TRUDY, TOM 17, VYP. 68 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 17 Nr. 68) Moscow, Izd-vo AN SSSR, 1958. 69 p. 3,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov
TRUDY, TOM 18, VYP. 69 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 18, No. 69) Moscow, Izd-vo AN SSSR, 1958. 69 p. Errata slip inserted. 2,500 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Akademiya nauk SSSR. Institut mashinovedeniya
PROBLEMY PROCHNOSTI V MASHINOSTROYENII, VYP. 2 (Problems of Strength in Machinery Design, No. 2) Moscow, Izd-vo AN SSSR, 1959. 97 p. Errata slip inserted. 3,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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LITEYNOYE PROIZVODSTVO; BIBLIOGRAFICHESKIY UKAZATEL' LITERATURY PO 1955 G. (Production of Castings; Bibliographical Index of Literature Through 1955) Moscow, Mashgiz, 1959. 687 p. 2,000 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2572
Tukachinskiy, Mikhail Savel'yevich
MASHINY - MATEMATIKI (Machines-Mathematicians) Moscow, Fizmatgiz, 1958. 129 p. 50,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2576
Dunayev, Petr Aleksandrovich
PNEVMATICHESKIYE MOLOTY (Pneumatic Hammers) Moscow, Mashgiz, 1959. 190 p. Errata slip inserted. 5,200 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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Gukaylo, Mikhail Yakovlevich
OSNOVNYYE PRINTSIPY KONSTRUIROVANIYA OPTICHESKIKH KONTROL'NO-YUSTIROVOCHNYKH PRIBOROV (Basic Principles of Designing Optical Checking and Adjusting Instruments) Moscow, Mashgiz, 1959. 124 p. 4,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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SBORNÍK VEDECKÝCH PRAC VYSOKEJ ŠKOLY TECHNICKEJ V KOŠICIACH, II, 1957 (Collection of Scientific Works of the Higher Technical School in Košice, II, 1957) Bratislava, SVTL, 1957. 198 p. 1,300 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2587
Lyapunov, Boris Valerianovich
OTKRYTIYE MIRA (Discovery of the Universe) 2d ed., rev. and enl. [Moscow] Izd-vo TsK VLKSM "Molodaya gvardiya," 1959. 207 p. 55,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Henze, Alfred
PRODUKTIONSVORBEREITUNG IN MASCHINENBAU-BETRIEBEN MIT EINZELFERTIGUNG (Scheduling of Custom-order Manufacture at Machinery-manufacturing Plants) Berlin, Verlag Technik, 1957. 154 p. (Series: Buchreihe Industrieökonomik, Band 5) Number of copies printed not given. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2591
Akademiya nauk SSSR. Institut mashinovedeniya
KOLEBANIYA V TURBOMASHINAKH; SBORNIK STATEY (Vibrations in Turbomachines; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 117 p. Errata slip inserted. 2,300 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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Moscow. Tsentral'nyy institut prognozov
VOPROSY GIDROLOGICHESKIKH PROGNOZOV (Problems in Hydrological Forecasting) Moscow, Gidrometeoizdat, 1959. 122 p. (Series: Its Trudy, vyp. 84) Errata slip inserted. 900 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2595
Paramonova, Zoya Alekseyevna
KONSTRUIROVANIYE VALOV I OSEY (Design of Shafts and Axles) Kiyev, Mashgiz, 1958. 142 p. (Series: Biblioteka konstruktora) 10,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2598
Kolev, Konstantin Stepanovich
NOVYYE METODY OBRABOTKI METALLOV REZANIYEM (New Methods of Metal Cutting) Moscow, Izd-vo "Znanyye," 1959. 29 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV, 1959, Nr 14) 42,500 copies printed. 1p. Micorfilm $1.80 Photocopy $1.80

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Vorob'yev, Yuriy Vasil'yevich
METOD MOMENTOV V PRIKLADNOY MATEMATIKE (Method of Moments in Applied Mathematics) Moscow, Fizmatgiz, 1958. 186 p. (Series: Biblioteka prikladnogo analiza i vychislitel'noy matematiki) 7,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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Shukhgal'ter, Lev Yakovlevich
MODERNIZATSIYA OBORUDOVANIYA I YEYE EKONOMICHESKAYA EFFEKTIVNOST' (Modernization of Equipment and Its Economic Efficiency) Moscow, Izd-vo "Znaniye," 1959. 47 p. (Series: Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya III, 1959, Nr 3) 49,000 copies printed. 1p. Microfilm $1.80 Photocopy $1.80

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VOPROSY RASCHETA ELEMENTOV AVIATSIONNYKH KONSTRUKTSIY; RASCHET TREKHSLOYNYKH

PANELEY I OBOLOCHEK. SBORNIK STATEY, No. 1 (Problems in Calculating Aircraft Structural Elements; Calculating of Sandwich Panels and Shells. Collection of Articles, No. 1) Moscow, Oborongiz, 1959. 169 p. Errata slip inserted. 2,600 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2609
Alent'yev, A. A., and A. A. Myasnikov
OSNOVY TEKHNOLOGII STEKLA. (Principles of Glass-Making Technology) Kiyev, 1958. 102 p. Errata slip inserted. 1,200 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2613
Eksperimental'nyy nauchno-issledovatel'skiy institut metallorezhushchikh stankov... Otdel modernizatsii
MODERNIZATSIYA METALLOREZHUSHCHIKH STANKOV; SBORNIK INFORMATSIONNYKH MATERIALOV, VYP. 2/20/ (Modernization of Metal-cutting Machine Tools; Collection of Informative Materials, Nr 2/20/) Moscow, TsBTI, 1958. 44 p. Errata slip inserted. 5,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2618
USSR, Komitet standartov, mer i izmeritel'nykh priborov
VINTY (Screws) Official ed. Moscow, 1959, 87 p. (Series: SSSR. Gosudarstvennyye standarty) 40,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Dmitriyevskiy, Sergey Yevgen'yevich
NEKOTORYYE TEORII KOLEBANIY S "SOBSTVENNYM ZATUKHANIYEM" I IKH OTSENKA S TOCHKI ZRENIYA OPYTNYKH DANNYKH (Some Theories of Vibrations With "Self-Damping" and Their Evaluation from the point of View of Experimental Data) Moscow, Izd. VZIPP, 1957. 82 p. Errata slip inserted. 200 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Gnevysheva, R. S.
KATALOG SOLNECHNOY DEYATEL'NOSTI ZA 1954-1955 GG (Catalog of Solar Activity in 1954-1955) Leningrad, Izd. Glav. Astron. Observatorii v Pulkove, 1957. 134 p. Errata slip inserted. 1,000 copies printed. (Series: Akademiya nauk SSSR. Glavnaya astronomicheskaya observatoriya. Trudy) 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2621
Asnis, Arkadiy Yefimovich
GAZOVAYA SVARKA I REZKA (Gas Welding and Cutting) Kiyev, Mashgiz, 1958. 86 p. (Series: Biblioteka svarshchika) 14,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

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Voloshin, Andrey Andreyevich
RASCHET FLANTSEVYKH SOYEDINENIY TRUBOPROVODOV I SOSUDOV (Design of Flange Joints for Pipelines and Containers) Leningrad, Sudpromgiz, 1959. 290 p. 3,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2635
Pogorelov, Aleksey Valsil'yevich
LEKTSII DIFFERENTSIAL'NOY GEOMETRII (Lectures on Differential Geometry) 2d ed. Kharkov, Izd-vo Khar'kovskogo univ., 1956. 183 p. 10,000 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2636
Lazarev, Petr Petrovich
ENERGIYA, YEYE ISTOCHNIKI NA ZEMLE I YEYE PROISKHOZHDENIYE (Energy, Its Sources on Earth and Its Origin) Moscow, Izd-vo AN SSSR, 1959. 277 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 15,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2641
Titkov, Nikolay Iosafovich, Aleksandr Sergeyevich Korzhuyev, Vladimir Georgiyevich Smolyaninov, Valdimir Aleksandrovich Nikishin, and Anna Yakovlevna Neretina
ELEKTROKHIMICHESKIY METOD ZAKREPLENIYA NEUSTOYCHIVYKH GORNYKH POROD (Electrochemical Method for Consolidation of Unstable Rocks) Moscow, Gostoptekhizdat, 1959. 77 p. (Series: Novaya tekhnika neftyanoy promyshlennosti) Errata slip inserted. 2,000 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2644
Jacobi, Moritz Hermann von
RABOTY PO ELEKTROKHIMII; SBORNIK STATEY I MATERIALOV (Works on Electrochemistry; Collection of Articles and Materials) Moscow, Izd-vo AN SSSR, 1957. 301 p. Errata slip inserted. 3,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2645
Babikova, Yu. F.
IZUCHENIYE PODVIZHNOSTI ATOMOV V TVERDYKH RASTVORAKH METODOM RADIOKTIVNYKH INDIKATOROV, AVTOREFERAT DISSERTATSII NA SOISKANIYE UCHENOY STEPENI KANDIDATA FIZIKO-MATEMATICHESKIKH NAUK (Using Radioactive Indicators in the Study of the Mobility of Atoms in Solid Solutions; Author's Abstract of a Dissertation For the Degree of Candidate of the Physical and Mathematical Sciences) Moscow, 1957. 15 p. 100 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2647
Sokol'skaya, Lidiya Iosifovna
GAZY V LEGKIKH METALLAKH (Gases in Light Metals) Moscow, Metallurgizdat, 1959. 114 p. Errata slip inserted. 2,800 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2648
Akademiya nauk Kazakhskoy SSR. Institut khimicheskikh nauk
TRUDY, TOM 1: FIZIKO-KHIMICHESKIYE I TEKHNOLOGICHESKIYE ISSLEDOVANIYA KHIMICHESKOGO SYR'YA KAZAKHSTANA (Transactions of the Institute of Chemical Sciences, Kazakh SSR Academy of Sciences, Vol 1: Physicochemical and Technological Studies of Chemical Raw Materials of Kazakhstan) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1957. 94 p. Errata slip inserted. 900 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2649
Bagdasar'yan, Khristofor Stepanovich
TEORIYA RADIKAL'NOY POLIMERIZATSII (Theory of Radical Polymerization) Moscow, Izd-vo AN SSSR, 1959. 297 p. Errata slip inserted. 4,000 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2667
Svecharnik, David Veniaminovich
DISTANTSIONNYYE PEREDACHI (Remote Transmissions) Moscow, Gosenergoizdat, 1959. 311 p. Errata slip inserted. 10,000 copies printed. 4p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2669
Ageyev, Dmitriy Vasil'yevich and Yaroslav Grigor'yevich Rodionov
ChM RADIOPRIYEM SO SLEDYASHCHEY NASTROYKOY (FM Radio Reception With Automatic Tuning) Moscow, Gosenergoizdat, 1958. 131 p. 21,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2671
Mukoseyev, Yuriy Leonidovich
RASPREDELENIYE PEREMENNOGO TOKA V TOKOPROVODAKH (Distribution of Alternating Current in Conductors) Moscow, Gosenergoizdat, 1959. 135 p. 5,300 copies printed. 2p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2672
Neyman, M. S.
AVTOMATICHESKIYE PROTSESSY I YAVLENIYA; (OBSHCHIYE VOPROSY TEORII SISTEM, SODERZHASHCHIKH UPRAVLYAYUSHCHIYE KOL'TSA ZAVISIMOSTEY) (Automatic Processes and Phenomena (General Theoretical Problems of Systems Containing Control Loops)) Moscow, Izd-vo "Sovetskoye radio," 1958. 147 p. Errata slip inserted. Number of copies printed not given. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2673
Zhabotinskiy, Mark Yefremovich and Irina L'vovna Radunskaya
RADIO NASHIKH DNEY (Modern Radio) Moscow, Izd-vo AN SSSR, 1959. 262 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 50,000 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2677
Aparisi, Rafael' Rafaelevich and Boris Arnol'dovich Garf
ISPOL'ZOVANIYE SOLNECHNOY ENERGII (Utilization of Solar Energy) Moscow, Izd-vo AN SSSR, 1958. 58 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 15,000 copies printed. 1p. Microfilm $1.80 Photocopy $1.80

BR-SOV/2679
Ginzburg, Georgiy Aleksandrovich
POSOBIYE PO IZMERENIYAM NA MELKOMASSHTABNYKH KARTAKH (Manual of Measuring on Small Scale Maps) Moscow, Geodezizdat, 1958. 135 p. (Series: Tsentral'nyy nauchno-issledovatel'skiy institut geodezii, aeros"yemki i kartografii. Trudy, vyp. 119) Errata slip inserted. 1,300 copies printed. 3p. Microfilm $1.80 Photocopy $1.80

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